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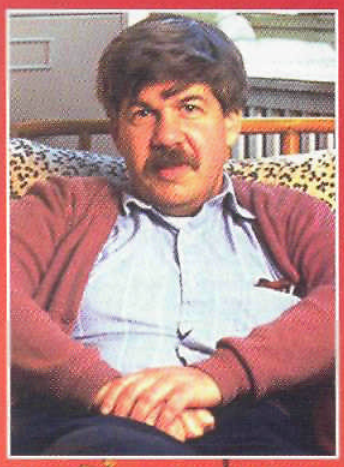
Skeptical Inquirer

THE MAGAZINE FOR SCIENCE AND REASON

Volume 26, No. 4 • July/August 2002



Stephen Jay Gould
1941–2002

Science and Pseudoscience IN RUSSIA

- First Skeptics' Congress Convenes in Russia
- The Reliability of Scientific Knowledge and the Enemies of Science
- Why is Pseudoscience Dangerous?

SPECIAL REPORT

Alternative Medicine and the White House Commission

Who Abused Jane Doe? Part 2

The High Cost of Skepticism

The Mad Gasser of Mattoon: How the Press Created Panic

Graham Hancock's Shifting Cataclysm

Published by the Committee for the Scientific Investigation of Claims of the Paranormal

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The SKEPTICAL INQUIRER (ISSN 0194-6730) is published bimonthly by the Committee for the Scientific Investigation of Claims of the Paranormal, 1310 Sweet Home Rd., Amherst, NY 14228. Printed in U.S.A. Periodicals postage paid at Buffalo, NY. Subscription prices: one year (six issues), $35; two years, $58; three years, $81; single issue, $4.95. Canadian and foreign orders: Payment in U.S. funds drawn on a U.S. bank must accompany orders; please add US$10 per year for shipping. Canadian and foreign customers are encouraged to use Visa or MasterCard.

Inquiries from the media and the public about the work of the Committee should be made to Paul Kurtz, Chairman, CSICOP, Box 703, Amherst, NY 14226-0703. Tel.: 716-636-1425. FAX: 716-636-1733.

Manuscripts, letters, books for review, and editorial inquiries should be addressed to Kendrick Frazier, Editor, SKEPTICAL INQUIRER, 944 Deer Drive NE, Albuquerque, NM 87122. Fax 505-828-2080. Before submitting any manuscript, please consult our Guide for Authors for format and references requirements. It is on our Web site at http://www.csicop.org/si/guide-for-authors.html and on page 69 of the March/April issue. Or you may send a fax request to the editor.

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Subscriptions and changes of address should be addressed to: SKEPTICAL INQUIRER, Box 703, Amherst, NY 14226-0703. Or call toll-free 1-800-634-1610 (outside U.S. call 716-636-1425). Old address as well as new are necessary for change of subscriber's address, with six weeks advance notice. SKEPTICAL INQUIRER subscribers may not speak on behalf of CSICOP or the SKEPTICAL INQUIRER.

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On the cover: Photo of Stephen Jay Gould, Deborah Feingold/Getty Images.

EDITOR'S NOTE

Russia, an Orwellian Nightmare, and Gould

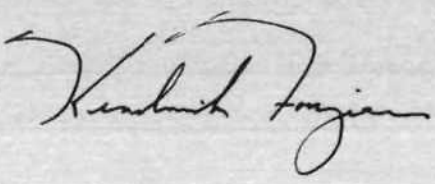
Fomenkism? Torsion fields and torsion generators? Retrovision? *Sofa-extrasens?* Extreme medicine? Geopathogenic zones? Vita Cardiomags? Some of the pseudosciences rampant in Russia have an exotic sound and flavor. But looked at a little deeper, they are the same kind of nonsense that afflict the West. In Russia many of these claims and gadgets have made inroads into the ministries of government. Now high-level scientists are fighting back. In October CSICOP and the Russian Academy of Sciences sponsored a special conference in Moscow on "Science, Anti-Science, and the Paranormal." We have three reports in this issue. CSICOP chairman and conference co-chairman Paul Kurtz gives an overview. Astronomer Yuri Efremov expounds on how the achievements in astronomy in recent years quickly outstrip all pseudoscience and give the lie to postmodernist claims of a "crisis in science," and a need to "overthrow the scientific paradigm." Prominent physicist Edward Kruglyakov chronicles the rise of pseudoscience and antiscience in Russia—including some of the wacky claims that have made their way into the halls of government—and reports on the special Russian Academy of Sciences commission against pseudoscience that he heads.

* * *

In this issue we publish the conclusion of "Who Abused Jane Doe?"—Elizabeth Loftus and Melvin Guyer's narrative report on their efforts to evaluate a claim of the recovery of a repressed memory and find the real truth behind it. A short postscript hints at the legal obstacles put in their way, denying what we used to think of as free speech, open debate, and academic freedom. CSICOP Fellow Carol Tavris follows with her own behind-the-scenes look at the travails they were put through. Her article "The High Cost of Skepticism" chronicles "an Orwellian nightmare," in which their universities, rather than supporting their rights to open free scientific inquiry, obstructed and harassed them. It is a troubling indictment of new, burdensome, *institutional* barriers to free inquiry.

* * *

Stephen Jay Gould is gone. His death May 20 at the age of 60 (see page 8) is a loss to science, skepticism, and the public. The best-known scientist and writer in recent times on paleontology and evolution, Gould was a first-rate evolutionary scientist, a steadfast defender of scientific ideals (and critic of creationism), and a prolific author of both scholarly works and elegant essays for the educated layman on evolutionary science (in all its wondrous aspects). Much has and will be written about him, including his brilliance, his occasional arrogance, the various views of evolutionary colleagues about his scientific work, but what I most appreciated was his writing about science for the layman. He chose to write about science for the public in a substantive way that never talked down to his audiences. He portrayed the marvelous complexity of both life and of the very human scientific enterprise, while finding wonderful humanistic connections between science and nature and everything from opera to baseball. His monthly essays in every issue of *Natural History* for twenty-seven years from January 1974 through December 2000, collected into a series of memorable books, educated several generations of us about evolution and a dazzling array of topics in the history of science. First Asimov, then Sagan, now Gould. All brilliant popularizers and interpreters of science for the layman. All taken from us prematurely.



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New Age, Paranormal Topics Influenced Alleged Domestic Pipe Bomb Terrorist Luke Helder

BENJAMIN RADFORD

At a time when international terrorism was on America's collective mind, it was an American terrorist who panicked many in the heartland in May of 2002. Six people were injured when pipe bombs left in their rural mailboxes exploded. Over the course of a week, eighteen pipe bombs were found in Iowa, Illinois, Nebraska, Colorado, and Texas.

Finally the bombs were traced to Luke J. Helder, a twenty-one-year-old college student from Pine Island, Minnesota. Following a high-speed car chase, he was armed with a shotgun when he was arrested in Reno, Nevada, on May 7. According to messages and material Helder left near the attacks, the bombs were "attention getters." Though many news reports characterized Helder's messages as anti-government, in fact many of them deal with his philosophical views and the paranormal.

In a six-page typed letter to *The Badger Herald*, a student newspaper at the University of Wisconsin-Madison, Helder discussed his belief in various paranormal topics and that death is an illusion. A friend of his was quoted by ABC News as saying that Helder "seemed really obsessed about New Age religion and death and the fact that death really doesn't mean an end to existence."

His motivation to plant bombs to kill and injure people came from his desire to enlighten the world to his beliefs and revealed truths: "I'm doing this because I care. . . . In the end you will know I was telling you the truth anyway. . . . I'm taking very drastic measures in attempt to provide this information to you."

Helder writes that each person can create his or her own reality, and that "once you begin to realize the potential you have as a consciousness/soul/spirit, you will begin to harness the abilities you have to produce realities. . . . Because you are producing the reality entirely, you are not confined to the laws of physics. . . ." Helder discusses the New Age idea of lucid dreaming, in which, he says, "you enter a reality within your body." Helder mentions astral projection as a path to knowledge, writing "Whether it's logic, meditation, channeling, astral projection, or ghosts, all are ways of knowing." An ex-girlfriend of Helder's said that he was fascinated with astral projection, or out-of-body experiences, and tried unsuccessfully to achieve one several times.

Agence France-Presse Photo/Pool/Scott Sady

Luke Helder, a 21-year-old college student, is taken into the Washoe County Jail in Reno, Nevada.

Helder also had a strong interest in ghosts: "Many consciousnesses linger around on earth, clutching to material things; this is what ghosts are. . . . You may hear ghost stories, but have you ever seen one? If you haven't, get out the camera and start seeing. . . . I was curious about the existence of ghosts, and my curiosity led me to further investigation, which in turn allowed me to *know* ghosts truly do exist. Needless to say, it was an exciting occasion to finally see one! When I got my film developed to find orbs, the week was even more exciting!"

Here Helder is referring to the idea that ghosts can be photographed, and appear as small unexplained blurs, lights, or "orbs" in photographs that were unnoticed when the photo was taken. As CSICOP Senior Research Fellow Joe Nickell notes in this book *Camera Clues*, there are many perfectly ordinary, photographic explanations for such phenomena.

"Orbs" are often simply the result of a flash reflecting dust particles or moisture droplets near the lens, or an unnoticed shiny surface.

Nonetheless, many self-styled "ghost experts" write books and give seminars on such "orbs" as a way for people to confirm the existence of spirits. Had Helder looked for science-based, skeptical information on ghosts instead of to the rafts of uncritical, pro-paranormal books, he might have come to different conclusions.

The paranormal cannot be said to have caused Helder's bombing attacks, just as belief in UFOs did not directly cause the mass suicide of the Heaven's Gate cult in March of 1997. But clearly belief in and fascination with the paranormal played a large role in these crimes and tragedies. Magical thinking in one part of a person's life can easily lead to a lack of critical thinking in others as well.

As usual, those who knew Helder appeared in the media to express shock and puzzlement over his actions. Helder's parents said that the only odd thing they'd seen him do recently was ask for his mother's Bible, then sit and read it for an hour, something they had never seen him do before. Within a week he was off making pipe bombs to maim or kill innocent people.

Benjamin Radford is a writer and Managing Editor of the SKEPTICAL INQUIRER.

Rise of the Raëlians: Flying Saucers, Science, Sex, and Religion

In 1973 Claude Vorilhon, then twenty-seven and editor of a minor auto racing magazine, was (he says) taken onto a flying saucer while hiking in the dish of a French volcano in a wooded area in France. There he met a four-foot humanoid extraterrestial with olive-colored skin, almond-shaped eyes, and long dark hair. The first words he heard from the humanoid was a question whether he regretted not having brought his camera. For the next six days, Vorilhon had conversations with the extraterrestrial, who explained that humanity had been created by means of DNA manipulation by beings known as the Elohim—a Biblical term, usually translated as God, but which actually meant "those who came from the sky." Past prophets including Moses, Buddha, Jesus, and Muhammed had been given their revelations and training by the Elohims who had selected them. The reason for the present mission was to remove previous distortions in the interpretation of their message and to get to know their creations on equal terms and to demystify "the old concept of God." Vorilhon, who then took the name of Raël, had been selected to pave the way for a second coming of the creators from outer space. This required teaching all humans the Raëlian beliefs, which emphasized peace, tolerance, *a love of science*, and sexual freedom. The question is what kind of science?

Vorilhon began teaching the "true" account of the creation of humans and as of this writing claims to have about 50,000 followers in eighty-four countries. Most of the believers are in French-speaking areas of Europe and Canada. Vorilhon, however, modestly says that only about 10 percent of his followers are active members. In the small farming community of Valcourt (northeast of Montreál) the group has established UFOland as their headquarters and embassy to the world. The building itself is part office complex and part museum. For two weeks every summer Raelians gather there for meetings and meditation.

In 1998 Vorilhon announced to his followers that the alien creators of Earth would soon return to Earth and it was necessary to expedite preparations for this second coming. One of the essential first steps was the recruitment of a number of young women members into the Order of the Angels to serve as hostesses and sexual mates for the arriving progenitors of humans. Within this order was a select group who agreed only to sleep with the aliens and their prophets, including of course Vorilhon. Vorilhon, however, emphasizes that the angels are under no pressure to sleep with him, since the Raëlians teach sexual freedom and not coercion.

The movement thrives on media attention and Vorilhon deliberately seeks it out, especially on sex issues. For example, to protest a 1992 decision in Quebec barring condom machines at certain Quebec high schools, the Raëlians passed out condoms to students from a van adorned with large spaceships. The group also bought billboard space in Toronto to welcome extraterrestrial visitors. Vorilhon also makes pronouncements about some world-shaking events which will take place but which only true Raëlians will know of. Like others who make such statements, those which have become known are sufficiently vague to meet almost any chance occurrence.

But it is the science part of the Raëlian agenda where the group seeks and gets publicity. After the cloning of the sheep Dolly in 1996, Vorilhon created a company, Clonaid, to do human cloning and help any gay or infertile couple have children for a $200,000 fee. He then opened a post office box in the Bahamas and several of the women in the Order of Angels volunteered to serve as the proxy mothers. Most daringly and most troubling, he also moved into cloning when one of his followers, Brigette Boisseler, who held two doctorates in chemistry, became the scientific director of Clonaid. Another follower, Mark Hunt, who had lost his ten-month-old son earlier, agreed to stock a lab to do DNA research and possible human cloning under the direction of Boisseler in Nitro, West Virginia, in the office building where his law firm was located. A more-or-less secret lab was being set up with equipment for research into DNA and with an ultimate goal of cloning a human. When this secret effort found its way into the press through a television appearance by Boisseler, the lab was closed by Hunt who complained that Boisseler was more a "press hog" than a researcher. She still maintains she has an interest in human cloning, and so apparently does Vorilhon.

Just how serious the effort might be is uncertain, and it is complicated by the fact that Vorilhon bragged he got millions in media publicity from his stunt. More importantly he attracted congressional attention. Rep. James C. Greenwood (R-Pennsylvania), as chairman of a House Energy and Commerce subcommittee, invited Raelians to testify before his committee last year as he prepared legislation to ban any cloning that would produce children. Vorilhon, who appeared as an expert witness in a white jumpsuit with his hair tied atop his head in a knot, testified that people one day would clone themselves and then download their personalities into the clones, achieving a kind of eternal life. Greenwood later said that Vorilhon's

testimony convinced lawmakers that "even kooks may have the capacity to make human beings" and that it was necessary to act against cloning.

Clearly, Vorilhon was used by the anti-cloning forces to emphasize the potential dangers of cloning without really giving it a fair hearing. Vorilhon agreed he was used, but held that the publicity was worth it and that his organization was growing. What bothers his critics the most is that in spite of his publicity stunts, his belief in flying saucers, his free love, is that he claims to be a scientist and that his religion is based upon it. Worst of all, the anti-cloning forces use him as an example of science at work.

—Vern Bullough

Vern Bullough is an adjunct professor of nursing at the University of Southern California and SUNY Distinguished Professor Emeritus.

Controlled Study Finds No Efficacy for St. John's Wort in Major Depression

The lead News & Comment article in our May/June 2002 issue reported that a major, multicenter, controlled study of the effectiveness of St. John's Wort in treating major depression was undergoing final peer review and about to be published.

That study has now been published, in the *Journal of the American Medical Association* (287 [14]: 1807–1814, April 10, 2002). The results are not good news for advocates of the herb's value in treating depression.

"This study fails to support the efficacy of *Hypericum perforatum* [St. John's Wort] in moderately severe major depression," the authors conclude. "The result may be due to low assay sensitivity of the trial, but the complete absence of trends suggestive of efficacy for *H. perforatum* is noteworthy."

The double-blind, randomized, placebo-controlled trial was conducted in twelve academic and community psychiatric research clinics in the United States. It involved 340 adult outpatients with major depression. Patients were randomly

assigned to receive St. John's Wort, a placebo, or sertraline (as an active comparator) for eight weeks. After eight weeks patients could continue with blinded treatment for another eighteen weeks.

Of the two primary outcome measures, neither sertraline nor St. John's Wort was significantly different from the placebo.

At the American Association for the Advancement of Science meeting in February in Boston, the study's principal investigator, Jonathan R.T. Davidson, M.D., of the Duke University Medical Center, described the study protocol as "a kind of model for studies of depression." He said it overcame limitations and uncertainties of earlier studies.

The study results were reported in *JAMA* by Davidson and twenty-five colleagues at the twelve research clinics, comprising the Hypericum Depression Trial Study Group.

"We have found no evidence for a superior effect of hypericum relative to placebo," say the authors. "*Hypericum* should not be substituted for standard clinical care of proven efficacy, including antidepressant medications and specific psychotherapies, for the treatment of major depression of modern severity."

The research was funded by the National Center for Complementary and Alternative Medicine and the National Institute for Mental Health.

—Kendrick Frazier

Kendrick Frazier is Editor of the SKEPTICAL INQUIRER.

Eloquence on Western Medicine, Alternative Medicine

A colleague of mine at Old Dominion University (Martha Walker, associate professor of physical therapy) has written one of the most eloquent letters about alternative medicine that I have seen. This was written to the ODU Courier *as a rebuttal to a letter in favor of Deepak Chopra's recent appearance at Old Dominion University, sponsored by the Continuing Healthcare Education Center of the College of Health Sciences. Professor Walker has given me her permission to submit her letter to CSICOP for possible publication.*

—Larry Weinstein, Associate Professor of Physics, Old Dominion University, Norfolk, VA 23529

A shortened text of Walker's letter follows:

Letter contained 'mistaken idea about both science and Western medicine'

In her letter to the editor on March 22, Amanda Damron states that the "scientific attitude relies on the Western medical model of always 'prescribing' a scientific cure (either pills or surgery) for the symptoms." This is a mistaken idea about both science and Western medicine.

I and many other faculty members in the College of Health Sciences have worked with patients as an integral part of Western medicine for more than twenty years. What we do cannot be summarized as "pills or surgery." I wonder how Ms. Damron can work alongside us and then dismiss us so readily. Does she really think that we do not offer hope or compassion or improvement in quality of life? Does she think we are cold, mean people because we practice Western-based medicine? Where does that stereotype come from?

Western medicine has been trying for years to get the average American to eat right, exercise regularly, floss, get enough sleep, stop smoking, and deal with stress. Can anyone have missed the massive public health campaigns in this regard? As for science, it is not the opposite of caring. It is simply a methodical way of looking at the world without regard to the subject that is being looked at. Western medicine has aspirations of being scientifically based, but no one would say that we have arrived yet. Health care is a work in progress.

You will find that when Western medicine has, using the scientific method, found a good solution for an illness, the alternative therapies addressing that illness disappear. For example, if you were exposed to anthrax would you scoff at mere "pills" for treatment? I think you would welcome the Cipro. For arthritis, however, we don't have such a great solution. Physicians usually recommend a combination of pills, exercise, weight loss, and, finally, surgery. In this area, there are loads of alternative therapies. These alternative therapies will continue to thrive until scientific method finds a really good solution to arthritis. And what if one of the alternative therapies is a good solution to arthritis? Scientific method can be used to investigate it and show its effectiveness!

—Martha Walker, Associate Professor of Physical Therapy

Stephen Jay Gould
1941–2002

Skeptical inquirers deeply regret the passing of Stephen Jay Gould. He played a unique role in the public square, for he was an eloquent exponent of the scientific outlook. His prolific writings and brilliant lectures at Harvard and universities far and wide on evolutionary paleontology and biology and his forthright criticisms of creationism cast him as a powerful defender of science. At a time when pseudoscientific and fringe claims continue to grow, there are all too few scientists willing to enter into the fray.

Gould's death leaves a void and it dramatizes anew how important it is to have popularizers of science. This role was played by Carl Sagan and Isaac Asimov, CSICOP Fellows of the past. We need to encourage new and daring defenders of science, gadflies in the name of critical inquiry; interpreters able to extend the public's understanding of science and its methods. All too few scientists and scholars today are willing to venture beyond their specialties in order to communicate with a wider audience.

Gould offered his own often controversial theories on how evolution occurred—such as his punctuated equilibrium hypothesis—and he suffered criticisms as a result. A veteran polemicist, he stood his ground in many debates with scientific colleagues. Throughout, he demonstrated that science grows by constant questioning and peer review.

Deborah Feingold/Getty Images.

Stephen Jay Gould was a Fellow of the Committee for the Scientific Investigation of Claims of the Paranormal and a recipient of its highest "In Praise of Reason" award. He was a frequent speaker at our conferences. He will be sorely missed.

Paul Kurtz
Chairman, CSICOP

Kansas Scientist Who Fought Creationists Honored by American Physical Society

Adrian Melott, the University of Kansas professor of physics and astronomy who led the successful fight against creationist-led anti-evolution education standards in Kansas, has been honored by the American Physical Society.

Melott, a founding board member of Kansas Citizens for Science, received the American Physical Society's Joseph A. Burton Forum Award during the spring APS meeting April 20–23, 2002, in Albuquerque, New Mexico. The award honored his efforts leading to reinstating quality science education standards in Kansas.

His Burton Forum Award citation reads: "For his outstanding efforts in helping to restore evolution and cosmology to their proper place in the K–12 scientific curriculum. As both a distinguished cosmologist and a respected member of the clergy, he played a key role in helping the people of Kansas reverse their State Board of Education's anti-science action."

Melott, a Fellow of the American Physical Society and a prominent cosmologist, gave two talks at the APS meeting. He also gave a special public talk titled "Intelligent Design is Creationism in a Cheap Tuxedo" April 22 in Albuquerque. That talk was sponsored by three New Mexico science organizations: the Coalition for Excellence in Science and Math Education, New Mexicans for Science and Reason, and the New Mexico Academy of Science.

Conspiracy Book About Sept. 11 Attacks a Best Seller in France

The president of the French leftist organization Reseau Voltaire, Thierry Meyssan, is rising to worldwide recognition as the auteur one of France's best-selling books: *L'Effroyable Imposture* (*The Frightening Deception*). Meyssan claims that the destruction at the Pentagon on September 11, 2001, was not caused by the impact of hijacked American Airlines Flight 77, but rather a truck bomb. He alleges that the U.S. government covered up this fact from the world as part of a larger scheme by the U.S military-industrial complex to covertly orchestrate the September eleventh massacres in order to justify the campaign in Afghanistan and elsewhere in the Middle East.

Although sales have been brisk, it is uncertain how many French readers actually buy into Meyssan's claims. He jump-started the book's popularity in an appearance on the French TV infotainment talk show *Tout le Monde en Parle* (*Everybody's Talking About It*). However, the more respectable French media have been unforgiving in their criticism. According to the weekly journal *Le Nouvel Observateur*, "The theory suits everyone—there are no Islamic extremists and everyone is happy. It eliminates reality." *Liberation* renamed the book "A Frightening Confidence Trick" and called it "a tissue of wild and irresponsible allegations, entirely without foundation."

An English-language synopsis of Meyssan's arguments is available on a Web page titled "Pentagon: Hunt the Boeing and Test Your Perceptions!" at www.asile.org/citoyens/numero13/pentagone/erreurs_en.htm.

The Web page suggests that an early, misinformed report by the Associated Press was the true explanation and that subsequent corrections are actually part of a coverup: "As everyone knows, on 11 September, less than an hour after the attack on the World Trade Centre [*sic*], an airplane collided with the Pentagon. The Associated Press first reported that a booby-trapped truck had caused the explosion. The Pentagon quickly denied this. The official U.S. government version of events still holds."

Meyssan assumes that the impact of a Boeing 757, weighing 100 tons and laden with fuel, would have caused far more damage to the Pentagon. The "hole" from the impact seems too small to him, and the most dramatic devastation didn't penetrate far enough into the "rings" of the building for his satisfaction. Where Meyssan has acquired the expertise to determine how much damage an aircraft can do to large buildings is an open question. Given the enormous death toll, the collapse of the roof and structure on the outermost ring and the incineration and damage to the outer three rings, a critic can only wonder what degree of damage would seem plausible to Meyssan.

Meyssan also muses about a lack of wreckage from the airliner, ignoring the experts' explanation that such a high-speed impact and the subsequent explosion and inferno amply explain how the Boeing jet was pulverized and incinerated.

Meyssan shows no inclination to offer an alternative that explains key questions, such as what happened to Flight 77 and high-profile passengers like Barbara Olson, TV commentator and wife of Solicitor General Ted Olson, if they *didn't* crash into the Pentagon.

Thus the Pentagon attack is added to the rumors and conspiracy theories following the Sept. 11 attacks. In a war in which truth and reality mix easily with rumor and deception, Meyssan's book can only fuel mistrust.

Further Reading:

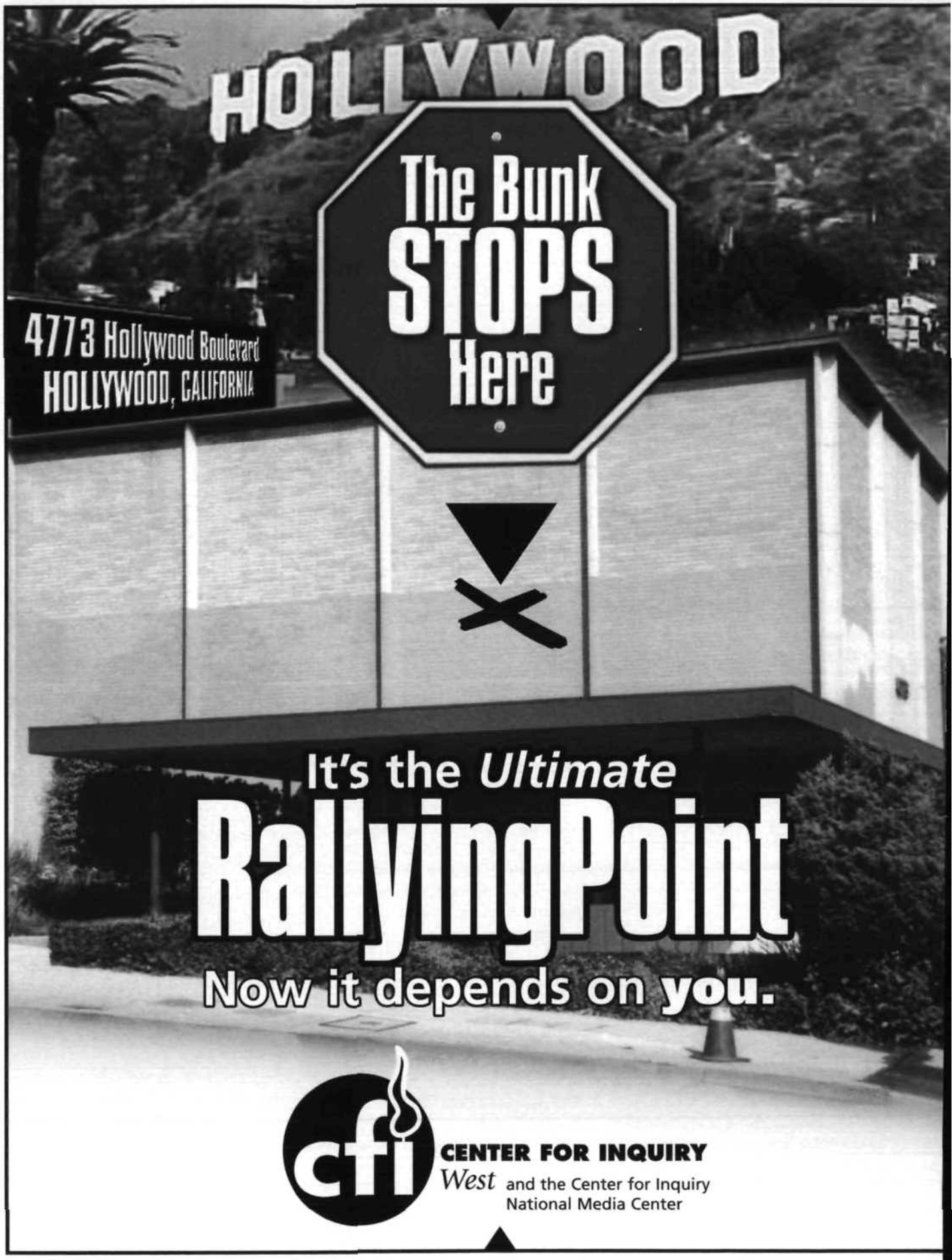
The Urban Legends Reference Pages: www.snopes2.com/rumors/pentagon.htm.

Time Europe Magazine: www.time.com/time/europe/magazine/article/0,13005,901020520-237165,00.html.

The National Review: www.nationalreview.com/robbins/robbins040902.asp.

—Kevin Christopher

Kevin Christopher is Public Relations Director for CSICOP.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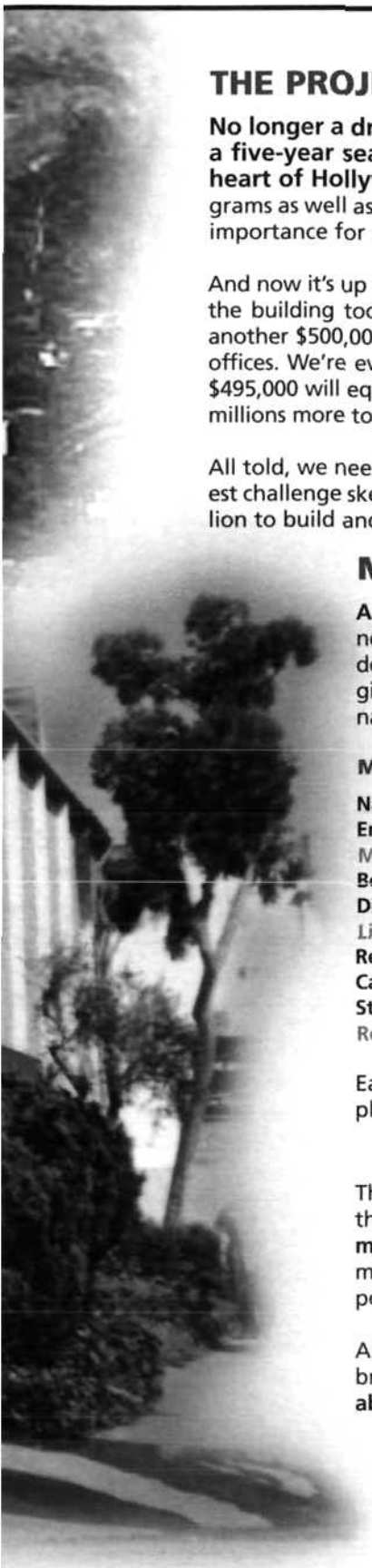

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White House 'CAM' Commission Reaches 'Preordained' Conclusion

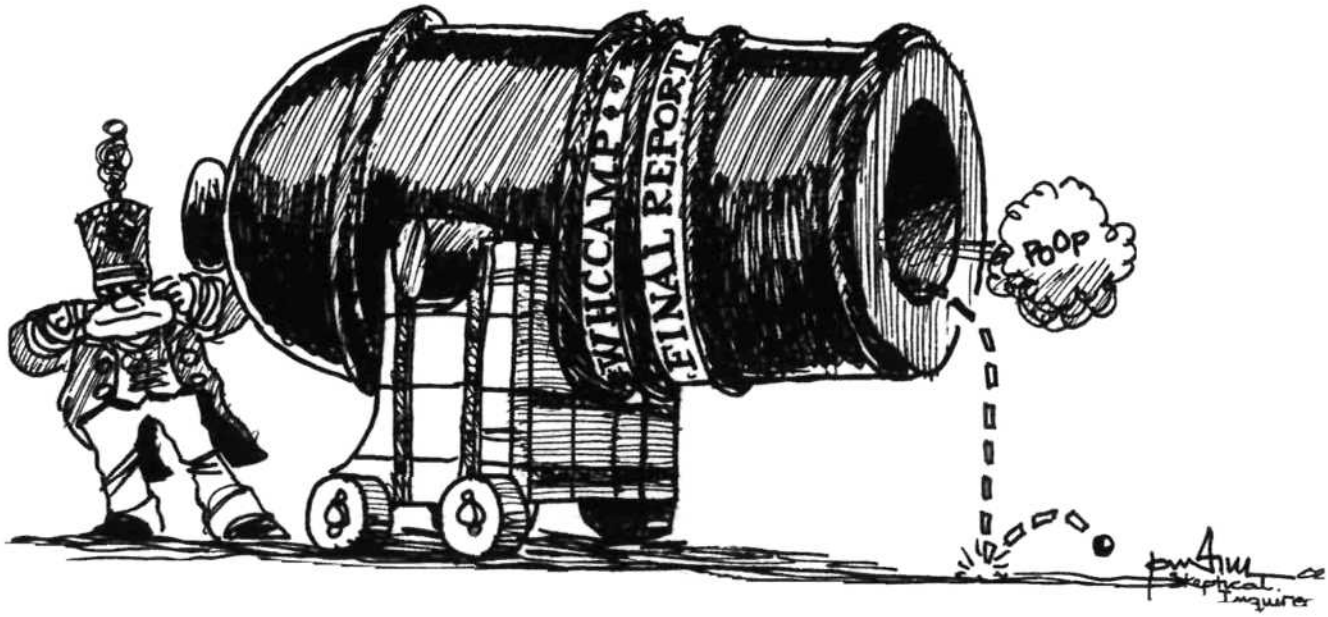
TIM GORSKI, M.D.

Two years after its establishment by then-President Clinton, the White House Commission on Complementary and Alternative Medicine Policy (WHCCAMP) issued its final report in early March 2002. Charged with formulating recommendations for "assuring that public policy maximizes the benefits to Americans of complementary and alternative medicine" [CAM], the group was overwhelmingly dominated by the most extreme CAM ideologues, including its chair, psychiatrist James S. Gordon M.D., a follower of the late Bhagwan Shree Rajneesh whose cult carried out bioterrorism attacks on U.S. citizens in Oregon in the 1980s.[1]

Dr. Gorski is an ob/gyn physician in practice in Arlington, Texas, president of the DFW Council Against Health Fraud, and an associate editor of the Scientific Review of Alternative Medicine. *E-mail: gorski@obgdoc.com.*

Soon after the commission's creation, Gordon made it clear just what his intentions were. The report of his commission, he boasted, would be "for medicine in the twenty-first century, as important as the Flexner report was to medicine in the twentieth-century. . . . I believe this commission has an opportunity to look at medicine and health care from a different perspective that can lead to a new model of medicine and even a new model of human biology."[2]

This agenda was borne out as a series of speakers at the WHCCAMP's "town hall meetings" assailed the "Western," "allopathic," "reductionistic," scientific "paradigm" generally and, on several occasions, the Flexner Report specifically. The Flexner Report was published in 1910 as *Medical Education in the United States and Canada: A Report to the Carnegie Foundation for the Advancement of Teaching.* It revolutionized medicine in the twentieth century by



exposing the deficiencies and unscientific elements of medical education and spurring reforms in medical school educational standards. A preliminary draft of the WHCCAMP's anticipated recommendations consisted of a laundry list of demands for more money, more privilege, and more power and prestige for CAM practitioners.[3]

The final report of the Gordon Commission was therefore, as one former National Institutes of Health (NIH) official put it, "preordained." It is a paean to the unproven wonders of CAM, which are never defined but claimed to "focus on individualizing treatments, treating the whole person, promoting self-care and self-healing, and recognizing the spiritual nature of each individual."[4] It identifies preventive medicine with CAM even though proven preventive measures such as vaccination and fluoridation are routinely disparaged by proponents of CAM. Likewise, nutrition is swept into the mix despite the fact that a huge number of mutually contradictory nutritional claims are made by CAM advocates. Most of all, the Gordon Commission report is an agenda for the wholesale medicalization of Americans' spirituality along New Age (and the Bhagwan's) lines.

The Gordon Commission report makes the usual demand for increased funding for research on the implicit assumption that everything that CAM proponents are certain of can be proven if only enough money is spent on it, ignoring the fact that all such work has been, to date, spectacularly unproductive. But the commission goes even further by suggesting that, while such validation is pending, public and private insurance coverage of CAM should be encouraged or mandated and that licensure and other laws ought to be revised to allow unscientific practitioners to ply their trades unhindered and with official approval.

The embarrassed Bush Administration, which appeared to have been completely blindsided even as to the existence of the commission, bottled up the report in the Department of Health and Human Services for more than three weeks. When it was finally released, it was clear that the letters of transmittal by Secretary Tommy Thompson had been rewritten to remove the effusive misrepresentations suggested by Gordon as to the nature of the commission and its work. To the President and leaders of Congress Thompson tersely stated only that: "The Report contains administrative and legislative recommendations. . . . We will review carefully the recommendations." The White House has refused to make any other comment.

The Gordon Commission report makes the usual demand for increased funding for research, ignoring the fact that all such work has been, to date, spectacularly unproductive.

The real surprise was that two members of the commission, Dr. Joseph Fins and Dr. Tieraona Low Dog, wrote a dissent to the group's final report, though it was buried at the very end in Appendix G. It is all the more surprising in that both were selected for their sympathies with CAM. Neither had expertise, experience, or even significant interest in the protection of consumers from unproven, ineffective, and aberrant medical claims and practices. And both gave many indications at the public meetings of the WHCCAMP that they were committed to working within the CAM ideology of the group. Yet they were both unable to endorse its final report. Appendix G, despite the fact that it lends credence to some unproven methods and often pulls its punches, is essentially a repudiation of the Gordon Commission and its work. Fins and Low Dog even consistently place CAM in quotation marks to indicate that its meaning is in doubt. Some excerpts:

> ". . . a presumption exists that complementary and alternative medicine will be found to be beneficial. This advocacy tone persists in the Report . . . giv[ing] voice to a perspective . . . that 'CAM' will lead us into a new paradigm of health care."
>
> ". . . research dollars are finite. . . . Asking for more research money to investigate an approach, practice or product simply because it is 'CAM' is an ideological, not evidence-based approach to science."
>
> ". . . the provision of 'CAM' . . . to underserved populations . . . [that] utilize folkloric or 'CAM' interventions because they cannot afford access to conventional care . . . becomes neither a complementary nor integrative intervention, but rather a less validated alternative to conventional care . . . we should not be a party to creating a separate but unequal care system . . . we should provide basic health care to every American before expanding benefits to include treatments or approaches that have not been shown through rigorous research to treat or prevent disease."
>
> ". . . we do not believe that 'CAM' providers are fungible with the primary care providers enumerated in Title VII [of the Public Health Services Act]. . . . they are not positioned for equivalency with conventional primary care providers. Efforts to equate their degree of training, or *the scientific basis of their practice*, with that of the designated primary care specialties puts the public at risk of receiving unvalidated and non-evidence based primary care."
>
> "'Promoting wellness,' 'health promotion' and 'prevention practices' are phrases . . . cited as being the focus of many 'CAM' approaches. It is unclear what these terms actually mean . . . these approaches are found in both 'CAM' and conventional medicine, . . . [and] [t]he notion that only 'CAM' supports healthy nutrition is neither accurate nor fair. . . . One has only to visit the local book store to find the numerous 'fad' diet books that fall under 'CAM' nutrition; high fat—high protein diets, eat according to your blood type diets and fruitarian diets, to name a few."
>
> "'CAM' 'health promotion' and 'prevention practices' also include

preventing disease by 'balancing qi,' 'eliminating parasites and toxins,' 'cleansing the liver' and/or by 'cleansing the blood' via a multitude of supplements and questionable practices. Our uncritical acceptance of 'CAM' wellness and health promotion can be interpreted as an endorsement of these claims. . . . Furthermore, the suggestion that conventional medicine is primarily focused on disease, while 'CAM' is primarily focused on health promotion and prevention . . . fails to adequately acknowledge public health initiatives that have been an integral part of medicine for decades, efforts that have dramatically improved the health of the Nation."

". . . most troubling . . . is the inclusion of spirituality under the rubric of 'CAM.' . . . The truth is that spirituality transcends any arbitrary designation of conventional and non-conventional medicine and cannot be claimed by any particular group. Furthermore, the conflation of spirituality and/or religion with 'CAM' could lead to an abridgement of the free exercise of religion by subjugating its practice to a regulated modality."

"[The majority position of the commission is that] 'The public has expressed interest in maintaining easy access to CAM practitioners.'. . . [but] the data does not support [this claim] . . . the literature indicates that the use of dietary supplements has decreased and that the majority of Americans *support increased regulation of supplements*, including requiring the Food and Drug Administration to review the safety of new dietary supplements prior to their sale."

"Where medical care is concerned, the common good calls for ideology and advocacy to yield to scientifically sound evidence of safety and efficacy. We are confident that this can be accomplished with respect and compassion for all Americans."

Since the release of the commission report, its chair has been aggressively wooing the media and pointedly ignoring or, when necessary, downplaying the rebuke of Appendix G. After an article in the *Washington Post* called attention to his associations with the Bhagwan, Gordon protested that he had never personally participated in the *Salmonella* attacks carried out by the cultists in Oregon to keep locals away from the polls. He neglected to say that, while it was happening, he was helping to bus homeless people to Oregon to vote for the cult's local political candidates.

But some media reports managed to cut through the smokescreen. Adam Rogers, writing for *Newsweek*, quoted Yank D. Coble, M.D., American Medical Association President-Elect as saying: "We all have a desire for simple and inexpensive solutions. But anything that sounds too good to be true often is."

Rogers himself noted the Gordon Commission's demand for more money for CAM research may be disingenuous, writing "What the CAMsters want may be impossible," concluding that:

> The awkward fact is that after ten years of research the National Center for Complementary and Alternative Medicine at NIH hasn't validated a single practice. Yet a few legislators, led by Iowa Sen. Tom Harkin, continue to push for more studies. All sides agree that ideally there'd be medicine that works, and medicine that doesn't, with no special distinction for "alternative." Separating the good stuff—like better ways of dealing with patients—from the nonsense is the contentious part. Maybe aromatherapy candles would help.[5]

Christina Larson, writing in the April 2002 *Washington Monthly*, was less oblique, pointing out that both the WHCCAMP and the National Center for Complementary and Alternative Medicine in the NIH amounts simply to "alternative medicine enthusiasts are using the federal government to gain respect and funding" and that the WHCCAMP "was stacked with alt-medicine proponents."

Larson notes that "the most consequential recommendation is that federal health plans, including Medicare and Medicaid, begin to cover CAM treatments," at the same time that "soaring costs have already forced Medicare to cut doctors' payments for routine treatments—and, subsequently, many physicians have dumped their Medicare patients—and the powerful seniors' lobby continues its push for prescription drug benefits." She tells readers: "If your rates go up in the near future because your employer picks up a new insurance rider to cover chiropractic treatment for asthma or arthritis, you may have this White House commission to thank."[6]

In a companion article, Chris Mooney considers the problem and concludes:

> CAM's proponents must do more than simply assert its medical value. They must finally cop to the rules of scientific rigor—no exceptions, no special pleading, no postmodern philosophy, and no hiding in the skirts of more legitimate treatments. Simply calling for "more research" won't do, since it's just another way of dodging the facts. . . . That means halting the CAM gravy train in which academic institutions are effectively lulled into submission by millions of dollars in foundation grants. The deans and presidents of respected schools like Harvard should step in and call out professors and directors who'd like to trade on their academic affiliation without living up to what that entails. . . . [and when something is not shown to be safe and effective] it should be rejected. By everyone.[7]

Notes

1. "A Large Community Outbreak Of Salmonellosis Caused By Intentional Contamination Of Restaurant Salad Bars," *JAMA*, 1997 Aug. 6; 278(5):389–95 and E. Patrick Curry, Notes on *James S. Gordon M.D., Scientific Review of Alt Med*, 2002, 5(4):226–228 available online at www.quackwatch.com/11Ind/gordon2.html, accessed 4/10/2002.

2. "Alternative Medicine Comes of Age," by Nicholas Gonzalez, M.D., in *totalhealth* magazine, Volume 23, No. 1 available online at www.dr-gonzalez.com/totalhealth_1_01_txt.htm, accessed on 3/19/2002.

3. An analysis of the WHCCAMP's draft recommendations of November 2001 is available online at www.quackwatch.com/07Political Activities/whccamp3.html.

4. The WHCCAMP report is available online at www.whccamp.hhs.gov/finalreport.html.

5. "An Herbal Rumble," by Adam Rogers, *Newsweek* Web Exclusive April 8, 2002, available online at www.msnbc.com/news/735762.asp, accessed on 4/8/2002.

6. "Sins of Commission," by Christina Larson, *The Washington Monthly* April 2002, available online at www.washingtonmonthly.com/features/2001/0204.larson.html, accessed on 4/8/2002.

7. "Science Fiction," by Chris Mooney, *The Washington Monthly*, April 2002, available online at www.washingtonmonthly.com/features/2001/0204.mooney.html, accessed on 4/8/2002. □

Prescriptions from the Land of Make-Believe Healthcare

WILLIAM M. LONDON

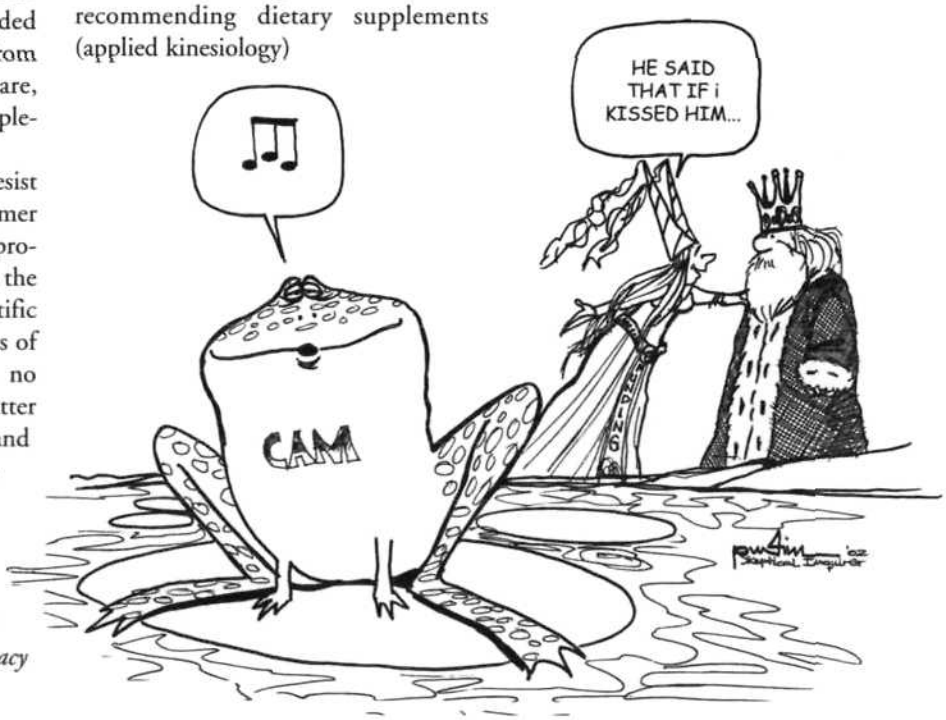
If President Bush were to appoint Enron executives to a White House commission on executives selling shares of their own company's stock, it would be a scandal. Americans would be appalled at such a blatant conflict of interest. They would suspect that commissioners would offer self-serving recommendations.

It's time for Americans to be appalled by the self-serving legislative and administrative recommendations offered in March by a commission established by President Clinton in the closing days of his administration. The members of Clinton's White House Commission on Complementary and Alternative Medicine Policy (WHCCAMP) included magnates and ideological leaders from the never-never land of healthcare, euphemistically described as "complementary" and "alternative."

It's a land where practitioners resist pressures from regulators and consumer advocates to refrain from making promotional claims for their methods in the absence of truly supportive scientific evidence. It's a land where promoters of gimmicks, gadgets, and nostrums, no matter how preposterous, no matter how poorly tested (if tested at all), and no matter how hazardous, receive not just acceptance, but glorification—and lucrative speaking engagements and other business opportunities.

Inhabitants of this never-never land include promoters of such dubious healthcare as:

- potions containing no molecules of a supposedly active ingredient (homeopathy)
- healing by manipulating chimerical energies of clients, sometimes via telephone (e.g., qi gong)
- lifelong regimens of spinal "adjustments" (as promoted by many chiropractors) to improve the flow of "innate intelligence" throughout the body
- muscle testing as the basis for recommending dietary supplements (applied kinesiology)
- manipulation of skull bones—which are actually fused—to treat jaw-joint and other symptoms (cranial osteopathy)
- audiotapes to help people use mental imagery to "replace eroded bone and joint tissue," "help calm overactive, misguided immune cells," "encourage insulin sensitivity at the cellular level," and, for cancer, "help mobilize a fighting response from immune cells" (which don't normally attack cancer cells)
- a treatment for various psychological disorders in which clients are guided in mental imagery and visual tracking of back-and-forth movements of a therapists'



William M. London is a CSICOP consultant and the program director of The National Council Against Health Fraud, Inc. (www.ncahf.org) a private nonprofit consumer advocacy agency.

finger in sets of twelve to twenty-four strokes (eye-movement desensitization and reprocessing)

Within the world of so-called complementary and alternative medicine (CAM) these methods are mainstream. Among their promoters are many of the WHCCAMP commissioners.

The commission never defined complementary and alternative medicine. It failed to acknowledge that CAM is marketing doublespeak used to conceal from consumers the shortcomings of irrational and scientifically invalidated methods. Instead the commission refers to CAM as if it is a genuine field of medicine needing special regulation, oversight, and, most ominously, integration into our healthcare and medical education system.

The commission called for the president to establish an office at the "highest possible level" within the U.S. Department of Health and Human Services. It recommended increased funding for research on "CAM practice and products" without even considering the prospects for any particular practices or products to be shown to help consumers more than harm them.

Buried in an appendix of the report is a dissenting statement by two of the commissioners—Joseph J. Fins, M.D., director of medical ethics at the Cornell campus of New York Presbyterian Hospital, and Tieraona Low Dog, M.D., who develops continuing medical education programs on botanical medicine. "While dogmatic disbelief of everything that is not currently explainable is foolish, and indeed unscientific," they wrote, "it seems equally foolish to ask the taxpayer to bear the enormous expense of sorting out those areas that are plausible from those that are improbable."

A painstakingly prepared, point-by-point critique of WHCCAMP's report appears on the Quackwatch Web site. Quackwatch notes that the report "falsely assumes that many safe and effective 'CAM' practices and products exist and need special federal promotion to gain recognition."

Last year, in testimony at WHCCAMP hearings, I emphasized the importance of identifying health fraud masquerading as CAM and recommending policies to oust bogus treatments from healthcare. Instead, the commission recommended inadequate safeguards for consumers and developed a blueprint for a costly bureaucracy to support the CAM industry's efforts to boost business as they bamboozle consumers.

President Clinton should never have established WHCCAMP. President Bush should reject its recommendations and, instead, seek rational alternatives to promote health, prevent disease, and improve healthcare. □

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Moscow Mysteries

Still the largest country in the world, Russia retains over 76 percent of the area of the former USSR, which collapsed in 1991. The collapse, along with the suspension of activities of the Communist Party, increased *glasnost* ("openness") in the new federal republic. With personal freedoms, however, has come a rise in pseudoscientific and magical expression.

I became increasingly aware of this through the visits of Russian notables to the Center for Inquiry–International: Valeriĭ Kuvakin (professor of philosophy at Moscow State University), Edward Kruglyakov (a distinguished physicist at Novosibirsk, Siberia), and Yuriĭ Chornyĭ (Scientific Secretary, Institute for Scientific Information, Russian Academy of Sciences). Subsequently I was one of several CSICOP speakers at an international congress, "Science, Antiscience, and the Paranormal," held in Moscow (October 3–5, 2001) and co-sponsored by the Russian Academy of Sciences. [Several articles from that conference appear in this issue.—Editor.] There I learned more about the newfound *glasnost* toward all things mysterious. I stayed on for several more days in order to investigate some of these.

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Pyramid Power

Pyramids are springing up across the Russian landscape. These are a modern expression of a craze fostered by *Psychic Discoveries Behind the Iron Curtain*, one that involved "the secrets of the pyramids." Citing the Great Pyramid of Cheops in Egypt—"one of the seven wonders of the world and one of the strangest works of architecture in existence"—the authors touted claims that small cardboard models of the Cheops pyramid could preserve food (especially "mummify meat"), relieve headaches, sharpen razor blades, and possibly perform other wonders (Ostrander and Schroeder 1970, 366–376).

The specific claims came from a Czechoslovakian radio engineer, Karel Drbal, who obtained Czech patent 91304 for the Cheops Pyramid Razor-Blade Sharpener. It supposedly generated some unknown and mysterious "energy." Unfortunately, subsequent tests of the claims failed to substantiate them. Pyramids preserved organic matter no better than did containers of other shapes; nor did placing razor blades in pyramids restore their sharpness, despite the subjective judgments of people fooled by their own expectations (Hines 1988).

Nevertheless, boosted by claims that pyramid power was unleashed "behind the iron curtain," the pyramid craze flourished in the United States. One company marketed a kit with eight wooden sticks that, glued in place, formed a pyramidal frame. Even without being covered (with paper or foil, for example), this could allegedly retard food spoilage, remove the bitterness from coffee, impart a mellower taste to wine, sharpen razor blades, perk up houseplants, and perform other wonders—according to the kit's guide book which claims, "The Pyramid is a geometric focusing lens of cosmic energy" (Kerrell and Goggin 1974).

Boosted by claims that pyramid power was unleashed "behind the iron curtain," the pyramid craze flourished in the United States.

A similar wire-frame "magic pyramid" was made to be worn on the head (and so looked rather like a dunce cap) in order to concentrate the wearer's alleged psychic or healing powers

(Randi 1982). Larger frames were available for one to sit inside in the lotus position as a means of improving meditation, or to place over the bed to gain enhanced vitality (Kerrell and Goggin 1974, 6–7). There were even pyramid-shaped doghouses that supposedly rid their occupants of fleas (Hines 1988).

The pyramid craze lasted through the 1970s (Randi 1995, 194) then declined, although it has never entirely gone away. New Age merchants still offer small gemstone pyramids that focus the "energy" of the particular stone (e.g., tigereye for enhancement of "psychic abilities") as well as a plastic "Wishing Pyramid" (into which is placed a paper with one's wish written thereon), and other items.

In Russia, pyramid power is on the rise—almost literally: I was able to visit a pyramid that towered forty-four meters (about 144.4 feet or some twelve stories). Built in 1999 by Alexander Golod, it is the tallest of about twenty such pyramids intended for alleged scientific and medical purposes. I was taken to the site—about 38 kilometers northwest of Moscow—by Valerií Kuvakin (who also translated various interviews), together with his wife, Uliya Senchihina (see figure 1). (Valerií heads the Center for Inquiry–Moscow.)

Figure 1. Valerii Kuvakin and his wife, Uliya Senchihina, approach a pyramid northwest of Moscow. It is one of several that dot the Russian countryside and supposedly utilize "pyramid power" for various beneficial purposes. Photo by Joe Nickell.

Although resembling a stone structure from the outside, from the interior the pyramid is seen to be constructed of translucent plexiglas panels over a wood framework. It was closed when we arrived but a custodian consented to let us in and show us around. The pyramid was largely empty, although off to one side were cases of bottled water that were supposedly being energized for curative purposes.

A rope-cordoned central area—where the pyramid power is supposedly most concentrated—contained some crystal spheres that were also being "energized." Despite being warned that the energy there was so intense that someone with a large "biofield" (or "aura")—such as I supposedly have—could lose consciousness, I ducked under the rope to dare the awesome power. I stood there for a time (while Valerií photographed me, barely containing his amusement, and while we continued our conversation with the custodian), but I felt no effect whatsoever.

Adjacent to the pyramid, in a small outbuilding was a small gift shop. A sign advertised (in translation) "Consumer Goods Energized by Pyramid." I decided to forego the "energized" gemstones: a woman at a store where we stopped en route for directions said she had bought some of the stones, which had been supposed to cure headaches, "and they didn't work," she stated, disparaging the pyramid claims. I did buy a small "energized" lead-crystal (glass) pyramid and a booklet titled (in translation), *Pyramids of the Third Millennium.* It featured the various new pyramids, including the one we were at.

According to this source, while the claims for pyramid power might seem like mysticism and shamanism to some, those with "intuition" will see that there is the basis of a new physics, a new biology, etc. It boasts that the new pyramids have reduced the incidence of cancer, AIDS, and other diseases in the areas surrounding them; have begun to cleanse their local environments; and promise to extend nearby residents' longevity to over 100 years. The booklet even promises that pyramids could help reduce religious and other conflicts (although we might note that they have not seemed effective in that regard, historically, in Egypt).

Valerií noted that the claims were published without any supporting scientific data. Physicist Edward Kruglyakov (2001), who had previously visited the site and in turn suggested it to me, found the claims utterly outlandish, unsubstantiated, and scientifically without merit.

Weeping Icons

Another paranormal phenomenon enjoying favor in the new *glasnost* is that of "miraculous" icons—notably one that was reported weeping in a Moscow church in 1998.

The Russian Orthodox Church has a tradition of venerating icons (from the Greek *eikon*, "image") which were painted on varnished wood panels and over time acquired a dark patina from candle smoke. Perhaps because they naturally depicted holy subjects and miraculous events—such as Jesus's imprint of his face on Veronica's veil (a fourteenth-century icon of which I viewed in the Tretyakov Gallery)—they seemingly began to work miracles themselves.

The claim that an effigy is in some way *animated* (from *anima*, "breath") crosses a theological line from *veneration* (reverence toward an image) to *idolatry* (or image worship) in which the image is regarded as the "tenement or vehicle of the god and fraught with divine influence" ("Idolatry" 1960). Nevertheless, reports of "weeping," "bleeding," and otherwise animated figures continue. In one modern case, in Sardinia, where a small statue wept blood, samples were analyzed and the DNA proven to be that of the statue's owner. Yet her attorney reasoned, "Well, the Virgin Mary had to get that blood from somewhere" (Nickell 1997).

"Salty tears" were said to flow from another image in Pavia, Italy, in 1980. No one witnessed the initial weeping, only the flows in progress, and the owner seemed to be alone with the figure (a small plaster bas-relief) whenever it wept. Soon, suspicious persons peeking through the windows, as well as from a hidden hole in an adjacent apartment, saw the lady apply water to the bas-relief

with a water pistol! (Nickell 1997)

And in 1996 in Toronto pilgrims were charged $2.50 to view an icon at a Greek Orthodox church that "wept" oil. As it happened, the priest had once presided over another "weeping" icon in New York and had even been defrocked for working in a brothel in Athens! I was involved in the case twice, the second time at the request of the parent church. With a fraud-squad detective standing by, I took samples of the oily "tears" for the Center of Forensic Sciences. The substance proved to be a nondrying oil, as expected; its use is an effective trick, since one application remains fresh-looking indefinitely. Because no one could prove who perpetrated the deception the case fizzled, but the church's North American head pronounced it a hoax (Nickell 1997; Hendry 1997).

One interesting feature of the exuding icons is the variety of substances involved (blood, salt water, oil, etc.) as well as the different effects (e.g., weeping tears, sweating blood, exuding oil). There are some apparent trends involved. In Catholicism the images tended to yield blood or watery tears until relatively recently when—seeming to tap the Greek Orthodox tradition (possibly due to a number of oil-weeping or -exuding icons at such churches that received media attention)—there has been a shift to oil (e.g., see Nickell 1999).

Interestingly, icons in the Russian Orthodox tradition seem, rather uniquely, to exude *myrrh*—or rather, apparently, myrrh-scented oil. Myrrh is a fragrant gum resin used in making incense, perfume, and herbal medicine, and in ancient times it was also employed in embalming. (For instance, it is one of the spices reportedly used in Jesus's burial, interspersed with his linen wrappings [John 19:39–40].) Indeed, in St. Petersburg, in 1998 when an unidentified mummy began to exude a myrrh-like substance, it was regarded as a miracle that helped identify the remains as the lost relics of a sixteenth-century saint. "According to Orthodox tradition," explains one source, "the appearance of fragrant liquids on relics is a miracle and means they belong to a saint" (Laguado 1998). Although forensic experts cautioned against a rush to judgment, priests were satisfied that droplets of the substance between the mummified toes were myrrh and therefore evidence of a miracle—seeming to ignore the possibility that myrrh could simply have been used in the embalming.

Icons in the Russian Orthodox tradition seem, rather uniquely, to exude myrrh—or rather, apparently, myrrh-scented oil.

Figure 2. Previously myrrh-exuding icon of the last czar, Nicholas II, shown on a devotional card.

Given this cultural backdrop, it is not surprising to find that Russian Orthodox icons—when they are in a reputedly miraculous mode—tend to yield myrrh as the substance of choice. In fact this is true even of icons at Russian Orthodox monasteries in the United States. In 1985 one in Blanco, Texas, was discovered "weeping Myrrh." ("Shrine" n.d.). Similarly in 1991 an icon that now reposes in a Russian Orthodox monastery in Resaca, Georgia, commenced to "exude myrrh" ("All-Holy" n.d.).

In 1998 in Moscow, an icon portraying the last czar, Nicholas II, reportedly produced myrrh almost daily after a parishioner brought it to the church on November 7, the date of the Russian revolution in 1917. Nicholas—along with the czarina, their children, servants, and a personal physician—was assassinated on the night of June 16, 1918. (Eventually their remains were discovered, identified through DNA, and given a funeral in 1998.) ("Church" 1999)

When I learned I was going to Moscow, I resolved to try to track down the lachrymose icon of Czar Nicholas. Subsequently, Valerií Kuvakin and I made our way by bus and Moscow's excellent subway system to one of the oldest districts in the city where we soon found the onion-domed church (called the Church of Nikola in Pyzhakh). There, as we looked around the interior, we observed the usual proliferation of icons, displayed on the iconostasis (a high screen that separates the sanctuary from the nave) and elsewhere. At least one depicted a weeping female saint, and I wondered if such depictions might have given rise to the idea of "actual" weeping icons. Upon inquiring about taking photographs we learned that they were prohibited, although—a few rubles later—we had permission to take a single picture. We also obtained a devotional card featuring the icon of the czar (figure 2).

We were surprised to learn that, according to the text on the reverse of the card, the miraculous icon was only a color photocopy. The original was painted by an American artist commissioned to glorify "the suffering czar." In 1987 a monk brought it to Russia where photocopies were made, one of which was received in Moscow in 1998. After prayers were made on the czar's behalf, the picture became fragrant on September 6 and began weeping on November 7. Actually the word used translates "myrrhing"—that is, "yielding myrrh." The picture

went on tour in Russia, Belorussia, and Serbia, and more than a dozen "healing miracles" were attributed to "the myrrhing image of our last czar."

Unfortunately when we visited the church it was no longer weeping, but people were coming into the sanctuary every few minutes to view the icon, typically kissing the glass that covered it, praying, and even prostrating themselves before it. When I was able to get a look at it myself I could see that, indeed, it was merely a facsimile. I sought to learn more about the circumstances of the previous "myrrhing," but Valerii's questions to the church staff were met with apparent suspicion. We therefore learned little apart from press reports and the text of the devotional card.

The staff's reaction made me suspicious in turn, since I have more than once found a wary attitude masking pious fraud. Further suspicions come from the fact that, as we have seen, other "weeping" icons are proven or suspected fakes, that Russian Orthodox icons exhibit a culturally distinct form of the "miracle" ("myrrhing"), and that the phenomenon occurred at a time when there was a campaign to bestow sainthood on Czar Nicholas II and his family. The patriarch of the church, Alexy II, opposed the canonization, stating that the imperial family were undeserving because of their poor leadership of both church and state ("Church" 1999). The "miracle" seems an attempt to counter that view by faking a semblance of divine approval.

The Pagan Stone

Another carryover from the past that is finding new expression is devotion to a certain ancient magical stone which was a focus of pagan ceremonies ("Kolomenskoye" n.d.). I was able to visit the site with a young woman, Nadya Tereshina (a reception supervisor at my hotel), who translated for me.

The stone is in Kolomenskoye, a state museum-reserve in south Moscow. Located on the west bank of the Moskva River, Kolomenskoye was once a royal summer retreat of Czar Ivan the Terrible (1530–1584). A guidebook calls it "one of the most evocative sites in Moscow" (Richardson 1998, 239), for its variety of interests. It contains an eleventh-century Slavic archæological site and, among many other treasures, the rustic log cottage of Czar Peter the Great (1672–1725). Muscovites flock to Kolomenskoye for festivals, summer sunbathing, and other activities.

Figure 3. New Age religious ceremony at a boulder once used for rituals by pagan tribes.

Actually the stone is one of two huge sandstone boulders left by continental glaciation and found a short distance apart in a spring-studded ravine of Kolomenskoye. Reportedly once serving "for pagan tribes' ritual ceremonies," they are dubbed the "Goose" and "Girlish Stone" ("Kolomenskoye" n.d.), the latter reposing on a hillside. As luck would have it, when we arrived on a Sunday afternoon following a sketchy map provided by one of Nadya's co-workers, Kirill Boliakiu, there was a ceremony in progress at that stone (figure 3).

The ceremony was not pagan—there were references to the "Christian family"—but it seemed to me, well, *paganesque.* The leader of the group, wearing a belted robe and sporting long hair and a beard, had a decidedly New Age appearance. He cleaned the stone and, to "warm" it, partially covered it with an animal pelt that had been draped over his shoulder. Crusts of bread were scattered on the stone so that, when birds carried the offering away, one's wishes would supposedly be granted. The supplicants raised their hands skyward, in the ancient attitude of prayer, as the leader gave an invocation. Finally, he strummed his zither and sang a song about "Old Russia."

Poignant as such a ceremony may seem, there is no evidence that the stone has any magical power or functions as anything other than a focus for people's hopes. Petitions, including those for cures of illness, will seemingly be granted or not according to the whim of circumstance and possibly the beseecher's own subsequent actions. The wishes that are fulfilled are accepted as proof of the stone's power, while those that are not are forgotten or explained away.

Suppressed during the communist era, religion is again flourishing in Russia as part of the new climate of change and tolerance of individual expression. Cults and offbeat groups like the one worshipping at the ancient stone—with its admixture of pagan, vaguely Orthodox, and New Age elements—are one manifestation of the trend.

Ghostly Portents

According to some sources Russia is a haunted place, and ghostly phenomena seem similar to those reported elsewhere.

For example, a photograph of a "Moscow ghost" illustrates the section on Russia in *The International Directory of Haunted Places* (Hauck 2000). However the anomalous white shape at the bottom of the nighttime tourist photo seems consistent with other photographs in which foreign objects in front of the lens have bounced back the flash to create various ghostly effects: strands of "ectoplasm" (caused by a wandering wrist strap), "orbs" (due to water droplets, dust particles, etc.), or, in the case of the "Moscow ghost," apparently a careless fingertip!

Then there are the apparitions. Hauck (2000) states that at the Kremlin the specter of Ivan the Terrible "is seen" (using the present tense) while another

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Return of Spring-Heeled Jack

Can you imagine a mysterious masked creature that looks like a black shadow, with a monkey-like face, flaming red eyes, and sharp metal claws, attacking people at night, jumping four stories high and disappearing into thin air? Bunk, you say? Well, that's not what the people in East Delhi, India, thought last year. In May, just such a creature was repeatedly spotted, instilling terror and claiming two lives. The craze got to a point where vigilante groups armed with sticks patrolled the streets at night on the lookout for the creature and police announced a 50,000 rupee ($1,067) reward for information leading to its capture.[1]

Hey, Hey, We're The Monkees

Reports of the "Monkey Man," as the press promptly baptized it, first reached the local police office on May 13, 2001. According to one report[2] the masked man had appeared in the village of Ghaziabad around 8:30 P.M. and had remained there till 4:00 A.M., terrorizing the residents. Vineet Sharma, grandson of the first victim, said that that night, when he and his brother were sleeping with their grandmother, a masked man had entered the veranda and attacked the old lady and pushed her. She suffered bruises in the abdomen and arms. Then the assailant went into the neighbor's house and injured a child, finally disappearing in the dark lane before villagers could be aroused.

After that first blitz, dozens of individuals in a number of areas in East Delhi claimed to have been hurt in subsequent attacks and pictures of scratched victims started to appear in daily newspapers.

The Spring-Heeled Jack as depicted by one of Victorian London's so called 'penny dreadful' newspapers.

Descriptions of the Monkey Man soon appeared to be contradictory: some described the entity as a masked man, others as a monkey, and a few others as a cat with glowing eyes. Some said it wore a skin-tight costume, while others stated it was a bandaged figure with a helmet. At least one witness claimed that it looked "like a remote-controlled robot like object, which jumped high in the air in a jiffy and vanished within seconds."[3]

What's certain, however, is the fact that two people (some sources say three) died because of this creature—or at least, because of the panic created. Early May 15, at 2:30 A.M., a pregnant woman in East Delhi fell down some stairs after being awakened by the shouts of neighbors saying that the Monkey Man had arrived. She died in a hospital, as did another unfortunate soul, who died in similar circumstances.

What is happening here? Is there really some freak monster out in the woods of New Delhi? Or is this some kind of evil superhero, waiting for the local Spider-man to capture him and return him to justice?

During the past century there have been tales of strange creatures or men with properties similar to this Monkey Man, such as the glowing eyes and the ability to suddenly disappear in front of witnesses. In the 1960s, in America, there was a spate of such sightings: the creature was dubbed Mothman or Owlman in different areas.[4] The past few years have seen a number of sightings of a creature dubbed El Chupacabra.

However, to find another episode that has had a similar impact on the public we need to go back at least 150 years,

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when Victorian London fell for some time in the clutches of terror of what was then known as "Spring-Heeled Jack."

Jumping Jack Flash

According to legend, the first reports of a strange leaping figure sighted in London date back to 1837; some descriptions tell of a strange monster, half-man half-bat, complete with wings and horns. Others refer to a powerfully built man in a shiny suit with a helmet and cloak, spitting fire.

Whatever its features, it seems that it was a series of sudden and unexpected aggressions that led an anonymous citizen to write a letter giving details of an attack by a mysterious "Spring-Heeled Jack," to Sir John Cowan, the Lord Mayor. Cowan drew public attention to the letter and his acceptance of the rumors led to a flood of letters from individuals reporting their own previous encounters with the terrible Jack.

Young Jane Aslop, for one, told the press that one evening she answered a violent knocking at her front door. There was a man in the shadows by the front gate who identified himself as a police officer, and asked her to bring a light . . . he claimed to have captured the infamous Spring-Heeled Jack! Excited, Jane fetched a candle and hurried it out to the gate but nobody could be seen.

Suddenly, two arms grabbed her neck and began to rip up her dress and body. It was only thanks to the arrival of Jane's sisters, alarmed by the struggle, that she was able to break free wearing only a few scars on her neck and arms. Into the distance, Jack leapt away.

Two months later, another girl, Lucy Scales, was returning home with her sister. As they entered a dark, empty alley, a tall, cloaked figure leaped from the shadows, belched blue flames into Lucy's face, blinding her, and then disappeared again.

In the ensuing years sightings of Spring-Heeled Jack multiplied and through the 1850s and 1860s he was spotted all over England. Sometimes he enjoyed slapping sentries with his icy hands and jumping atop their guard boxes, while other times he was reported as leaping into some apartment from an open window, trashing the furniture around and then leaving by jumping out of the window again.

The few times when he was cornered he was able to escape thanks to one of his fabulous leaps. He soon became a sort of folklore figure, the subject of so called "penny dreadfuls," melodramas and at least one later film, *The Curse of the Wraydons* (1946). Even mothers teaching their children to behave cried the name of that fearful bogeyman: "Be good or Spring-Heeled Jack will get you!"[5]

Just an Illusion

The careful reader will certainly have noticed by now the many similarities between the case of Spring-Heeled Jack and its modern equivalent, Monkey Man. In both cases a mysterious character, half-man and half-something else, on whom descriptions rarely agree, attacks defenseless people unprovoked and then disappears in an impossible way. No traces of his passage can ever be found but there are many who claim to have seen it, or at least to have felt its presence. It is in fact only on the basis of a feeling that the attacker was pursuing them that two people jumped off a roof.

Investigation by the police, finally, brings forth similar results in both cases: some scratches and bruises on the victims of the elusive creatures turn out to be caused by animal bites or accidents, while most of the wounds could have been self-inflicted by impressionable people. Statements from the victims change overnight and are vague and often contradictory. Like in the old days, when sensationalistic newspapers' accounts fueled sightings of Jack, the same thing happened again recently. The final report from the Indian police said: "It was due to unsubstantiated media reports that people were encouraged to come out with bizarre accounts of the creature though no one had actually seen it."[6]

Furthermore, in both cases a host of imitators jumped on the bandwagon: pranksters, persons of malicious intent (like in Japan, which is currently experiencing a series of "Pandaman" murders with the perpetrator wearing a Panda mask),[7] and possibly some who simply saw an opportunity to get some attention.

The conclusion of Indian police is similar to one reached by those who have carefully studied the case of Spring-Heeled Jack: "The mysterious 'Monkey Man' that instilled terror and claimed three lives in the Indian capital was simply the product of the city's collective imagination."

The conclusion of Indian police is similar to one reached by those who have carefully studied the case of Spring-Heeled Jack: "The mysterious 'Monkey Man' that instilled terror and claimed three lives in the Indian capital was simply the product of the city's collective imagination."[8]

In other words, this was another sensational example of what sociologists call collective delusions. "Collective delusions," say sociologists Robert E. Bartholomew and Erich Goode, "are typified as the spontaneous, rapid spread of false or exaggerated beliefs within a population at large, temporarily affecting a particular region, culture, or country. . . . Many factors contribute to the formation and spread of collective delusions and hysterical illness: the mass media; rumors; extraordinary anxiety or excitement; cultural beliefs and stereotypes; the social and political context; and reinforcing actions by authorities such as politicians, or institutions of social control such as the police or military."[9]

Usually, it all starts when, in an uncomfortable environment—dark and foggy alleys in Victorian London yesterday,

degraded neighborhoods with unrepaired street lights and scarce drinkable water in New Delhi today—something unusual happens. In London, it is quite possible that some street assaults actually took place, since there have always been similar assaults anywhere in the world, but it was only following an anonymous letter that the culprit was identified as the improbable Spring-Heeled Jack. In New Delhi, likewise, it may be that some aggressive, roaming monkey got too close to some people sleeping and scared some child. This spark is usually enough to start the mania: from that moment on, anything that seems a little bit out of the ordinary immediately becomes a Monkey Man, a leaping Jack or anything else: a black cat walks on the roof? It's Monkey Man! Two drunks get into a fight? It's Monkey Man attacking an innocent victim!

In Victorian London the imaginary exploits of Spring-Heeled Jack were soon forgotten and replaced in popular culture by the real and horrible ones of another Jack, the Ripper. In New Delhi, on the contrary, the wave of panic resulted in street lights being turned on, plentiful buckets of water being distributed, and better police-guarded streets. As Douglas Chapman remarked in his commentary on the episode for Strangemag.com, "This may be the first time in history that fortean phenomena—genuine, error, or hoax—has resulted in improved social services."[10] Can you imagine?

Notes

1. "India's 'monkey man' branded imaginary," ccn.com, June 22, 2001. See also: *Hindustan Times*, 16 May 2001; *Mainichi Shimbun*, 2 May 2001; *Daily Pioneer*, 16 and 20 May 2001; *Times of India*, 17 May 2001, 19 May 2001.
2. "Monkey man goes amok," Hindustan times.com, May 12, 2001 (www.hindustantimes.com/nonfram/130501/det1ST03.asp).
3. Ibid.
4. Nickell, Joe. 2002. 'Mothman' Solved! SKEPTICAL INQUIRER March/April 26(2): 20.
5. Begg, Paul, "Spring-Heeled Jack: The Terror of London," in Brookesmith, Peter (ed.), *Open Files*, London, Orbis Publishing Ltd, 1984.
6. cnn.com, op. cit.
7. Chapman, Douglas, "Chaos in Delhi: Monkey Man Madness," Strangemag.com.
8. cnn.com op. cit.
9. Bartholomew, Robert E., and Erich Goode. 2000. "Mass Delusions and Hysterias." SKEPTICAL INQUIRER, May/June 24(3): 20–28.
10. Chapman, Douglas, op. cit. □

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source ("Ghosts" 1997) states that images of the fearsome czar "appeared many times" (employing the past tense). Both sources agree that the most appearances occurred in 1894 before Nicholas II's wedding to Alexandra, when he was to accede to the throne following the death of his father. Supposedly Ivan's phantom "brandished his heavy baton as sinister flames danced about his face."

The Kremlin is also allegedly haunted by the ghost of Lenin (1870–1924), the Russian revolutionary. In 1961 his spirit supposedly contacted a medium to tell her he despised sharing his mausoleum with dictator Joseph Stalin (1879–1953) "who caused the Party so much harm." The medium, a communist heroine devoted to Lenin and imprisoned by Stalin, revealed Lenin's alleged wishes in an address to the party congress, and the next night Stalin's body was removed and reinterred elsewhere. Also, during the power struggle of 1993, Lenin's ghost was reportedly seen pacing anxiously in his former office and other government sites (Hauck 2000; "Ghosts" 1997).

What are we to make of such tales? First of all, the apparitions seem typical of those reported elsewhere and may have the same explanations as them; i.e., they may be due to a welling up of the subconscious during daydreams or other altered states of consciousness and may be triggered in part by the power of suggestion, especially among certain highly imaginative people (Nickell 2000).

Moreover, the reported encounters show an obvious tendency for Russian ghosts to serve as omens. In different places and times people perceive ghosts in terms of their own cultural attitude. According to R. C. Finucane, in his *Appearances of the Dead: A Cultural History of Ghosts* (1984): "Each epoch has perceived its specters according to specific sets of expectations; as these change so too do the specters. From this point of view it is clear that the suffering souls of purgatory in the days of Aquinas, the shade of a murdered mistress in Charles II's era, and the silent grey ladies of Victoria's reign represent not beings of that other world, but of this."

As *purposeful* as Shakespeare's ghosts (recall how the specters of Hamlet and Banquo were driven by revenge), those of Russian historical figures tend to function as portents in anxious times. While I toured the Kremlin and stood outside Lenin's tomb in Red Square yet saw no ghosts, I nevertheless could not escape feeling the impress of the often-troubled past of a great country. Such personages as Ivan the Terrible and Lenin, magnified by history and legend, loomed large—at least in my own haunted thoughts.

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The First Skeptics' Congress Convenes in Russia

The Russian Academy of Sciences cosponsored a special conference with CSICOP on "Science, Anti-Science, and the Paranormal" last October in Moscow. Russian scientists complained about the growth of uncritical public acceptance of pseudoscience in Russia and participants passed a resolution warning of the increasing anti-science, charlatanism, and irrationalism.

PAUL KURTZ

Belief in pseudoscience and antiscience has been rising in Russia, as it has in other countries of the world. This is especially true in the mass media and popular press, but pseudoscience has also entered into Russian science, largely because skeptical points of view have not been heard. This has been of special concern to many Russian scientists, who believe that the scientific community needs to provide critical examinations of paranormal claims—which mainstream scientists heretofore have largely deplored but ignored.

With this vexing problem in mind, the Russian Academy of Sciences, cosponsored a special conference with the Committee for the Scientific Investigation of Claims of the Paranormal (CSICOP) on "Science, Anti-Science, and the

Three co-chairmen, October 2001, CSICOP / Academy of Sciences Conferences, Moscow, Russia. Paul Kurtz, Valerii Kuvakin, and Edward Kruglyakov.

Paranormal." This was held on October 3–5, 2001, at the headquarters of the Academy of Sciences in Moscow. Founded in the eighteenth century, the Academy survived Stalinist repression during the Soviet period. The Russian Academy is considered Russia's elite scientific body. It includes in its highly select roster the most prestigious scientists in the country.

The Russian intelligentsia is largely unfamiliar with our emphasis on skeptical inquiry, but a number of them are now sympathetic to the agenda defended by CSICOP.

The conference was co-chaired by Edward Kruglyakov, a member of the Academy, who is a research physicist and deputy director at the Russian scientific city of Novosibirsk; Valerií Kuvakin, president of the Russian Humanist Society and former chairman of the department of philosophy at Moscow State University; and myself as chairman of CSICOP.

Well over 200 scientists and researchers came from all over Russia and neighboring republics—from Ukraine to Kazakhstan—to participate. Valerií Kuvakin heads the Center for Inquiry at Moscow State University, which opened four years ago. He is also editor of their journal *Zdravyí Smysl (Common Sense* or *Critical Thinking*) and editor of a series of books published in Russian. The Center, a joint project of CSICOP and the Council for Secular Humanism, is committed to reason, science, and free inquiry in all areas of human interest.

This conference marked my fifth trip to Russia in the last twelve years. I have participated in several conferences in Russia over the years, but this is the first one devoted exclusively to science and the paranormal. The Russian intelligentsia is largely unfamiliar with our emphasis on skeptical inquiry, but a number of them are now sympathetic to the agenda defended by CSICOP. During the long period of the Soviet Union, the official dogma of the Communist Party ruled the country, and alternative viewpoints were suppressed, though the rulers defended what they called "scientific Marxism." With the collapse of the Soviet

Paul Kurtz is the chairman of CSICOP and was a co-chairman of the Moscow conference.

Union, all sorts of paranormal and religious claims proliferated, but there were few defenders of critical thinking.

Both Kruglyakov and Kuvakin have visited the Center for Inquiry in Amherst, New York, Kuvakin several times as a Research Fellow. The Center for Inquiry in Moscow State University is also a strong proponent of human rights and democracy, which it considers essential for the flourishing of science.

Kruglyakov was appointed chairman of the Russian Academy's new "Commission Against Pseudoscience and the Falsifications of Scientific Studies." His task is to work with CSICOP and other skeptical groups in providing information about uncorroborated claims. In his paper, "Why Is Pseudoscience Dangerous?" [see page 33], he was particularly concerned with unsubstantiated pseudoscientific theories that are being introduced into mainline physics and accepted without dissent. Kruglyakov was recently asked by President Putin for recommendations in treating this problem. Kruglyakov urged increased funding for scientific research and education. Incidentally, news of the conference prior to our arrival was apparently discussed in the Duma and engendered heated controversy.

Russian scientists at the conference complained about the growth of astrology, psychic phenomena, UFOlogy, and alternative medicine, but until now they said they did not have the proper tools or the information with which to criticize these topics.

Russian scientists at the conference complained about the growth of astrology, psychic phenomena, UFOlogy, and alternative medicine, but until now they said they did not have the proper tools or the information with which to criticize these topics. The need for scientific education in Russia was emphasized by astronomer D.G. Sordin, who said that the funding for scientific research and education is in crisis, for it has declined precipitously. He cited the fact that Russia's most influential science magazines have lost readership. For example, *Science and Life* has dropped from 3.4 million during the Soviet period to 40,000 circulation today. Russia's leading physics magazine, *Quantum*, has fallen from 315,000 to 5,000 readers. Garry Abelev, also a member of the Academy, said that pseudoscience is growing in biology and medicine. Well-known TV personality Sergeí Kapitsa, vice president of the Academy of Sciences, attributed the growth of pseudoscience to sociological causes and said that it is a symptom of the "worldwide disintegration of society." Yuriĭ Efremov, another noted astronomer, in his paper [see page 29] criticized the increasing influence of pseudoscientific philosophies, such as postmodernism and religious fundamentalism, which have subtly undermined the naturalistic outlook and the ideals of the Enlightenment.

Representatives of the Russian Orthodox Church and some exponents of spirituality and the paranormal attended the public sessions of the meetings. Much has been written about an alleged religious revival in Russia. Lev Mitrokhin, a member of the Academy and social philosopher, said popular interest, somewhat intense several years ago, has already begun to abate. Most people do not attend church, but they do not call themselves atheists or skeptics. Many Russians were concerned about the possible growth of cults in Russia, but popular interest here has likewise begun to decline.

A number of members of CSICOP participated in this conference. They included Willem Betz from Brussels, who discussed homeopathy and alternative medicine. Amardeo Sarma, head of the European Council of Skeptical Organizations and of CSICOP's Center for Inquiry in Rossdorf, Germany, dealt with the Shroud of Turin and the problems of creating a skeptics movement in a country. James Alcock, psychologist at York University, analyzed the question "why people believe." Richard Wiseman from England criticized parapsychology. In attendance from the United States were Lee Nisbet, who talked about media misinformation; Joe Nickell, who discussed miracles; and Jan Eisler, who dealt with the limitations of "therapeutic touch."

In the last session of the conference the participants passed a resolution against antiscience, charlatanism, and irrationalism in Russia and supported the work of the new Russian committee [see page 28]. The Russian Humanist Society also passed a resolution protesting the violation of the separation of church and state, and, in particular, the efforts by the Russian Orthodox Church to reintroduce religion into the public schools, which they thought would undermine science. Having suffered decades of religious repression at the hands of Stalinism during the Soviet period, participants, however, were cautious in their criticism of religion.

The conference received extensive coverage in the media, front page in *Isvestia* and other newspapers, as well as considerable comment in scientific journals, TV, and radio.

Last but not least, the proceedings were held in a friendly atmosphere and concluded with many toasts of vodka at the Academy and at the Faculty of Philosophy of Moscow State University, chaired by the dean. The most important conclusion to emerge from the conference is that Russian scientists wish to participate in the world skeptics movement. They wish to take part in future conferences and to dialogue with their colleagues throughout the world. □

Against Antiscience, Charlatanism, and Irrationalism in Russia

RESOLUTION

of the International Symposium Science, Antiscience and Paranormal Beliefs Moscow, October 5, 2001

The international symposium organized by the Russian Academy of Sciences, Moscow State University named after M.V. Lomonosov, and the Russian Humanist Society, has been provoked by the necessity to resist the unprecedented expansion of false science, paranormal beliefs, and newer forms of irrationalism into Russian culture at the end of the twentieth and beginning of the twenty-first centuries.

1. The condition of devastation, collapse of former ideals, and absence of new ones have led Russia to the point where many people have begun to believe only in miracles. One such "miracle" has appeared in the form of false science, which is now the well-organized net of professional fakers. Today this organized false science has become a powerful, immoral, and criminal force. Pseudoscience and charlatanism affect even the highest echelons of state institutions, becoming a parasite on the budget of science, which is already poor.

2. Another serious problem, which threatens reason and science both in Russia and many other civilized countries, is the renewal of paranormal beliefs—archaic superstitions and preconceptions of the magical conscience of ancient ages. Astrologers and psychics, occultists and shamans, magicians and sorcerers who propagandize mysticism, magic, divinations, and prophecies, have widely penetrated into the market of services, especially in the fields of medicine, psychology, and education.

3. We cannot keep silent about the danger of the current state-church policy in this country. Politicization and ideological revival of religions are a delayed-action bomb that threaten to split Russia into hostile parts: believers versus nonbelievers, "the right faith versus the wrong faith." The situation has reached the point where the church has begun to occupy important positions in governmental bodies, the army, and the system of state education.

4. Taking into account the dangerous level of expansion of false science, charlatanism, and irrationalism into society, this conference:

- considers the organized false science and charlatanism in Russia as immoral and a socially dangerous activity;
- approves the goals and program of action of the Commission Against Pseudoscience and the Falsifications of Scientific Studies of the Presidium of the Russian Academy of Sciences, which is designed to promote objective and independent expertise and review the results of scientific studies, without which any scientific research is impossible;
- appeals to the leadership of the Russian Academy of Sciences to provide more support to this Committee;
- considers the clericalization of education in schools and universities as an action that violates Clause 14 of the Constitution of the Russian Federation proclaiming the separation of church from state and school;
- appeals to the mass media to be more responsible in reporting about sensational claims or paranormal phenomena, and to provide more opportunity for the experts to accompany such claims with their scientific comments;
- asks the Committee for Education and Science of the State Duma of the Russian Federation to organize hearings on the expansion of false science, charlatanism, and paranormal beliefs into Russian culture;
- approves the activity of the Russian Humanist Society and its magazine *Zdravyj Smysl*, promoting scientific ideals, all human moral, legal, and civil norms, and resisting false science, charlatanism, and irrationalism.

(Adopted October 5, 2001, at the closing plenary session of the conference [two against]. According to the registration sheets 210 people participated in this event, besides the foreign guests, radio and TV correspondents.)

Translated from Russian by Pyotr Trevogin, edited by Valerii Kuvakin of the Center for Inquiry–Moscow.

The Reliability of Scientific Knowledge and the Enemies of Science

The extraordinary achievements of astronomy in recent years show that critics who question the alleged bias of scientific knowledge don't understand science. Researchers fight attempts to misportray or abuse scientific results for good reason. There are dangerous enemies of science, and the situation is more serious than it may seem.

YURI N. EFREMOV

Outside the world of natural scientists there are many who talk about "the crisis of science," and question the entire direction of science. Many knowledgeable sociologists assert that objective scientific truth does not exist at all. This is also repeated by the apologists of the fashionable philosophy of postmodernism and bellicose clerics. A real war with the scientific outlook thus has been declared. Indeed, there is some danger that we are approaching the sunset of the second great experiment with rationalism (after the classical world). The return of the Middle Ages could become a reality.

We should constantly remind people that from the beginning of the twentieth century, human beings have lived in an

environment created by the achievements of science. We usually do not notice the air that we breathe. The time between scientific discoveries and technological development usually takes decades. Electricity, air travel, television, victory over many mortal illnesses, the common comforts of life that we today enjoy are based in the end on the results of the disinterested curiosity of scientific researchers.

Was our universe created in the laboratory of an ancient super-mighty civilization? Deep problems of human existence are posed by modern science. The view that science is poor in spirit is simply due to ignorance of its frontiers.

Without the perfect flowers of a fundamental science there will be no fruits suitable for use. This is also true for technology. Modern engineering is based on the laws of mechanics, which have grown out of the observations of the heavenly bodies, and astrophysics is inseparable from the physics of elementary particles. The abstract achievements of a modern-day science will help our grandchildren solve future problems. Technology and civilization itself will eventually die if science is allowed to perish.

Outside Russia, despite severe criticisms of science, rapid developments go on not only in theoretical but also experimental research, demanding huge funding. The Russian six-meter telescope, which in 1980 was the largest in the world, is now outstripped by two dozen telescopes, including two ten-meter instruments, and there are development projects to construct thirty-meter and even one-hundred-meter telescopes.

The achievements of astronomy in recent years seem to come from the pages of science fiction novels. They prove that the crisis of science exists only in the minds of its enemies. Some examples are in order. The dream of discovering planets around the stars inspired astronomers for decades. Since 1995 they are being discovered almost monthly—today we know about eighty planets. It is possible now to compare our solar system with others, to specify the theories about the formation of planets and our Earth, similarly for the geology of useful minerals, etc.

Black holes, an area of space with a strong gravitational field from which light cannot escape, until recently was only a theoretical concept. Today we know of about a dozen candidates for black holes inside our galaxy alone; and we are able to attribute the existence of supermassive black holes in the nuclei of some fifty galaxies. Movements of stars at the center of our galaxy recently were measured that prove the presence of invisible objects with masses of 2 million suns. Black holes, opening a window in other spaces and times, have become a reality!

Modern cosmology removes a problem of the origin of our universe, asserting that it, as well as other universes, spontaneously arose from a primary vacuum, and this process of generation of new universes basically can someday be reproduced in our laboratories by the collision of elementary particles of super-high energy. Was our universe created in the laboratory of an ancient super-mighty civilization? Deep problems of human existence are posed by modern science. The view that science is poor in spirit is simply due to ignorance of its frontiers.

For the past half-century, due to space research and the development of radio-astronomy, the energetic range of quantums of electromagnetic radiation of heavenly bodies accessible to study has extended fifteen orders of magnitude. Humans have visited the Moon, and have sent rocket probes to other planets. The knowledge gained via optical telescopes in a tiny window of wavelengths through a terrestrial atmosphere has been completely confirmed by these achievements. The development of methods of neutrino registration recently has brought confirmation (contrary to first results) of the validity of the theory of the sources of energy of the Sun (and the stars in general). Incoming observations of gravitational waves will allow testing many theories and certainly will bring challenging new problems. In view of this, what is the "crisis of science" that its critics speak of?

The injustice of the statements of the critics of science is especially clear in astronomy. Observational programs enable us to verify conclusions of concrete theories, but frequently new phenomena are discovered or objects explained by other theories are also tested.

We come nearer to a more complete understanding of our universe, because we are its children. Max Planck, the founder of quantum theory, on which all modern electronics is based, said that he understood that the laws of human thinking coincide with the laws managing sequences of impressions, which we receive from the encircling world. Consequently, thinking allows humans to penetrate inside the external world. The paramount role thus played by the external world is not something dependent on man, but something absolute, he added. Similarly, Albert Einstein said that the truth of the existence of the external world is independent of the perceiving subject and this underlies all natural sciences.

This conviction of researchers is shared by philosophers, the representatives of the evolutionary theory of knowledge. G. Follmer has noted that the subjective structures of knowledge provide us with the realistic approach to the world, as they were

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formed during evolution by human adaptation to the real world.

We may add that the criterion of universal practice proves the validity of scientific knowledge. The collective practice of humankind confirms that scientific theories work. The hydrogen bomb exploded in accordance with the theory of the nuclear sources of energy in the stars, and relativity corrections are needed both for the rapid movement of interplanetary space probes and elementary particles in a synchrotron.

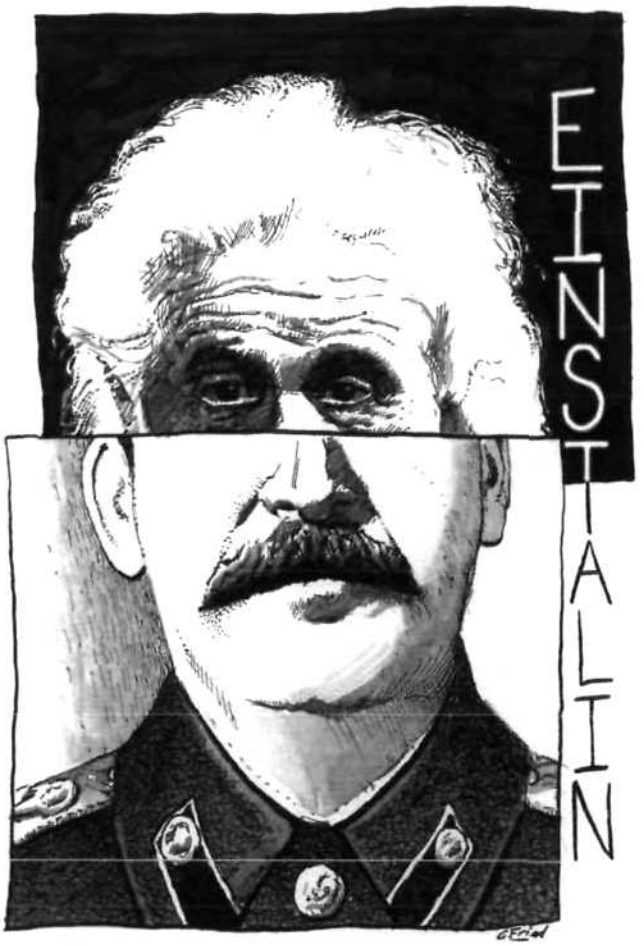
The objectivity and reliability of the results of science nevertheless are furiously challenged by its enemies, who unhappily are believed to be the philosophers of science. After Thomas Kuhn and Paul Feyerabend, modern "sociologists of knowledge" assert that it is impossible to trust physical theories: since they replace one another, it is possible to consider them to be a result of constructs by scientists. However, V. Ginzburg, the leading Russian physicist, a quarter of a century ago noted that the conclusions by Kuhn are based on misunderstanding of the major facts confirmed by the history of science: new knowledge, if it is true, always includes the old, which appears as a special case of the new theory.

According to Einstein, the best destiny of a physical theory is to specify a way of creating new, more general theories, within the framework of which the previous one remains as a limiting case.

I would suggest that we consider this Niels Bohr's principle of correspondence as a condition and attribute of the genuine scientific character of a new theory. This implies, by the way, that so called "scientific revolutions" do not exist. The emergence of relativity theory and quantum mechanics was nothing but a "revolution" in the psychology of scientists and philosophers, not in science itself. I would argue that the Copernican revolution was not a revolution either—it marked the emergence of genuine science. One could on the contrary assert that there is a permanent revolution in science. But this is simply a way to deny the very existence of revolutions in science. By all means, science never cedes territory once conquered.

The conclusions of postmodern philosophers about the alleged bias of scientific knowledge have not been demonstrated, not only because it is against science, but because philosophy does not provide the objective criteria for judging the validity of a scientific hypothesis or theory. Understanding the achievement of science requires special knowledge. It is why the deepest contributions to the theory of knowledge have been made by great physicists of the twentieth century, not by "expert philosophers." The sociologists of knowledge have concentrated their study on the statements of scientists about their results. From these subjective statements the sociologists of science have concluded that the product of science grows out of the accord of scientists—overlooking the fact that these statements by necessity are subjective.

At any rate, the end result of science is the objective product of multiple verifications and the findings of generations of scientists. The final goal of science is the understanding of the world. Movement in this direction is the aim of scientists. It is



the essence of a scientist, and it is only because this fundamental research is still alive in Russia. It can contribute to the advances of world science, despite the fact that salaries of Russian scientists are barely adequate.

Also, it is because of this that researchers are so hostile to any attempts to misportray or abuse scientific results.

The aspiration for truth also explains why scientists struggle against pseudoscience. The philosophy of postmodernism serves to justify every possible para-scientific doctrine. The most ancient of them, astrology, does not require such huge financial support as the Russian "torsion generator" people do, but can well harm the people trusting in its predictions. There is no need to repeat that there is no material agent of influence of stars and planets on the destinies of the people—and there are no statistics confirming the forecasts of astrologers. They make claims that come true with the same frequency that would be expected from chance. The astrologers advising the Ministry of Defense make Russia potentially dangerous to all the world—and for its own population. . . .

The question of parapsychology is more complicated, for the issue of the physical mechanism of consciousness is far from being resolved. Hypnosis, suggestion under hypnosis, (especially postponed suggestion) amaze the imagination and

are subject to research. However, without exception all the experiments on transfer of thoughts at a distance either are unsuccessful, or are doubtful, or are certainly proved frauds. The last is a fair statement in particular for those experiments, on which were based Karl Jung's concepts of synchronism and transpersonal consciousness.

A previously solely-Russian phenomenon, the so-called "new chronology," is getting to be a new international parascience. These people, led by the academician A. Fomenko, affirm that authentic history begins ostensibly only with the thirteenth century. Astronomers showed twenty years ago that ancient observations of stars and planets, including what cannot be forged with knowledge available up to the eighteenth century, confidently confirm normal chronology. However, until 1999 most historians were passive, not wishing to besmirch their hands, and most of the mass media propagandized "Fomenkism." The grandiose experiment to check the education level and the common sense of our population has begun. The results will be interesting.

The historical and astronomical arguments of A. Fomenko are the fruits of specific selection of the initial data, or their direct juggling. Moreover, in a number of cases he has been caught in a blatant lie. Nevertheless Fomenko continues the propaganda of his fantasies, and even some even educated people believe him now, outside of Russia as well.

On the horizon there is a potentially an even more dangerous enemy of science—"scientific" creationism. Creationists go about abolishing not thousands of years of human history, but billions years of the evolution of the universe. They affirm that it is necessary to take literally the words of the Bible about seven days of creation, the age of the universe being 6,000 years, and so on. Like Fomenko, creationists selectively snatch out the most doubtful, from a million facts, and ignore the rest. Like Fomenko, they do not stop before making obviously false assertions. To challenge the existence of objects with ages far exceeding 6,000 years, it is necessary to assert that there are scientists believing that there are no stars farther away than 6,000 light-years. . . . They do not notice that such inventions discredit religion. A clever writer notes that a biologist, having read a book by a creationist filled with errors, will attribute such ignorance to all of Christianity.

The situation is more serious than it may seem. Almost literally repeating the words of the Roman Pope in 1951, some representatives of Russian science nowadays declare that science has come to a recognition of the religious view of the creation of the world. However, both cosmologists and theologians long ago showed that the expansion of the universe does not tell us about its creation, that the Creator should not be relegated to the role of a scientific hypothesis. Moreover, modern cosmologic theory has come to the conclusion that our universe, as well as sets of other ones, began existence spontaneously, as fluctuations of a primary vacuum. There is no basis to identify this vacuum with the Creator.

Pseudoscientists, ignorant officials, unwise philosophers, an ignorant mass media, and clerics all are pulling Russia backwards. Yes, the decline of interest in science is dangerous to the future of mankind. This is seen all over the world, but Russia seems to be ahead of the entire planet, this time in its retrograde movement toward the New Middle Ages.

At some schools lessons of religion have begun, and at universities theology is taught—contrary to the Russian Constitution. Some of the books, preaching creationism, carry a signature stamp saying the book is recommended by the Moscow patriarchy. While these Russian books still explain to children that Earth revolves around the Sun, some Western creationists even see that as a contradiction to sacred writing and attempt to expose Copernicus. However, half of the adults in the United States do not know how long it takes Earth to revolve around the Sun. It is quite possible that the fruits of the present reforms of education in Russia will be not less impressive. . . .

The events of September 11, 2001, show that the situation in the world quickly changes and to master it without science is impossible. The competition for raw material, especially cheap sources of energy, can reach the most severe forms, down to the military struggle of the states, if science will not teach us to manage our resources and add new ones. In Russia now, science is the least prestigious employment (the salary of a janitor is equal to the salary of a full professor), and science soon can disappear. However, pseudoscience finds powerful patrons in Russia. Poorly educated statesmen want to increase edible crops faster, regardless of whether or not the suggested project has scientific merit. For the same reason Stalin supported pseudobiologist Lysenko, who promised to quickly produce plentiful crops.

Pseudoscientists, ignorant officials, unwise philosophers, an ignorant mass media, and clerics all are pulling Russia backwards. Yes, the decline of interest in science is dangerous to the future of mankind. This is seen all over the world, but Russia seems to be ahead of the entire planet, this time in its retrograde movement toward the New Middle Ages. Whether we can stop this fall into the abyss depends on our success in struggling with antiscience—and also whether popular scientific literature will be accessible to the population. Unfortunately, this is not the case in Russia today. □

Why Is Pseudoscience Dangerous?

The growth and influence of pseudoscience in Russia has become serious. Many pseudoscientific devices and schemes have gained influence within governmental organizations. A special Commission of the Russian Academy of Sciences against pseudoscience has had some effect in addressing the problem.

EDWARD KRUGLYAKOV

The end of the twentieth century was marked by a boom of astrology, mysticism, and occultism in many countries. In the USSR (during the last years of its existence) and then in Russia the situation was even worse in a sense. The system's collapse and the wreck of old ideals—along with the absence of new ones—caused many people to hope for some kind of miracle. The mass media contributed to this tendency. Through their irresponsibility, pseudoscience has filled newspapers, magazines, radio, and TV.

In recent years a new phenomenon has arisen. Pseudoscience has become a powerful, well-organized force. Over the last decade in Russia, about 120 academies have appeared, many of which don't deserve the name "academy."

Some of them give their stamp of approval to professionally inadequate doctors of science in various fields. Others do the same in pseudoscientific disciplines, giving diplomas to astrologers, UFOlogists, and others of the sort.

In Russia, even research institutes with pseudoscientific tendencies have appeared. I'll give only two examples: the International Institute of Space Anthropecology and the International Institute of Theoretical and Applied Physics. The first has even managed to attain state accreditation with the help of the Russian Ministry of Science. The second has received financial support both from the Ministry of Science and the Ministry of Defense for the well-known swindle of torsion fields.

Peaceful coexistence between science and pseudoscience is impossible. From time to time, science attempts to unmask pseudoscience. The latter fights back with fierce hatred. Pseudoscientists are anxious to settle accounts with the Academy of Science, because the Academy is a great obstacle to these newly half-baked "scientists." Here are a few quoted statements of such people:

- "By the end of the twentieth century, on the periphery of official academic science, such a substantial arsenal of facts, conceptual guesses, and extravagant technologies was compiled, demanding an integral and unpreconceived comprehension, that it encourages many scientists to expect a new scientific paradigm in the beginning of the third millennium."
- "The scientific paradigm is hopelessly obsolete. The epoch of materialistic science, which does not recognize this, is finished." Meanwhile, according to the statements of such "scientists," "the influence of thought on the composition of liquid chemicals was proved." Furthermore, "The world's leading physicists and philosophers warned of an inconsistency between the modern paradigm and the fundamentals of physics."

Thus pseudoscience predicts the full breakdown of science unless the scientific paradigm is changed. Meanwhile, according to a statement of academician Z.I. Alferov, recently awarded the Nobel Prize, ". . . the crisis in quantum physics is not observed. For the most part in the physics kingdom, it is calm now."

The Emergence of Antiscience

Where does this passionate desire to replace a scientific paradigm stem from? Here is what one of the pseudoscientists said: "Up to now the broadly spread dogma of experimental studies of the nineteenth century is to recognize as 'scientific' only one such technique, which provides reproducible experimental results irrespective of whenever and wherever they could be obtained."

What a fertile ground for antiscience if this "dogma" is canceled. There will be no need for explanations or repeatable evidence.

Here is what one of the main theorists of the so-called science of torsion fields, "academician" G. Shipov said: "Now there is no doubt in the existence of telepathy, levitation, clairvoyance, retrovision, or that energy of consciousness plays some certain role in physical processes." And since science does not recognize this, therefore, "official science lags behind the new developments."

Science has long been too indulgent to pseudoscience. This cannot continue. Pseudoscience becomes dangerous for both science and society. The bacchanalia of parascientific delirium has even begun to affect the highest echelons of power. Pseudoscience has begun to gain the favor of officials representing the supreme authorities of the country.

In the 1980s, for example, Chumak and Kashpirovsky forced their way onto television in spite of the fact that during those years TV was controlled by the state! This means that paranormalists have appeared on TV with the consent of the supreme officials. These officials might wish to know at least that Mr. Chumak is not original. His trick with "charging" water was unmasked in the beginning of the twentieth century by American physicist Robert Wood.

It is worth mentioning the sad fact that Mr. Kashpirovsky pushed his ideas on members of the state Duma, and Mr. Chumak also has tried to do this.

Here is another case, involving M.D. Maley, chairman of the Interdepartmental Commission on Scientific and Technical Problems of the Industry of Defense of Security Council of the Russian Federation. The purpose he pursued looked rather reasonable: "From the viewpoint of the Security Council, our task is to filter correctly the basic directions and orient the present and future management of the country with respect to a launching position of Russia in this scientific-technical revolution."

To prepare for scientific breakthroughs, Mr. Maley created a "Large State Research Center." This is praiseworthy in itself; a high-ranking government official facilitates the development of a science. Alas, when one hears the purposes, you can't help being horrified at the ignorance of the official: "Replacement of the concepts of quantum physics by neutron physics, vacuum as emptiness by the concept of neutrino fields is in prospect for us . . . .We have some works at the R&D [research and development] stages that contradict common sense and cannot be described by any equation."

One can add to this many other "pearls" characterizing the activities of the Center, but it hardly seems worth mentioning. But I would mention that the Secretary of the Security Council of Russia, heading the Council in the first years of existence of the new Russia, O. Lobov, has managed to

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distinguish himself. He patronized the introduction to Russia of the scandalous doomsday cult Aum Shinrikyo.

Bad Science in High Places

Astrologers, claimants of extrasensory powers, and newly appeared "scientists" of other "professions" more and more actively push themselves through into the State Duma, ministries, and even into the President's circle. Here are recent examples:

- In the Ministry of Emergency Measures, a laboratory of "extrasenses" was arranged, and though no results have been reported yet, the laboratory nevertheless exists and is financially supported.
- At the Ministry of Defense, a military astrologer is employed. In addition, the Ministry has created a specialized military unit manned with psychics and others who claim special powers. The research is conducted secretly. Such senseless secrecy is advantageous only to dishonest officials. It raises the possibility of corruption and the absence of outside review and control.
- At the Ministry of Defense, the Extreme Medicine Center was created. At first glance, this seems quite reasonable. However, listen to what they do there, as described by the head of the Center, Professor P. Shalimov: "We test charged water, study man's aura." Quite frequently in the mass media we hear complaints about the lack of funds for the army. At the same time, inside the Ministry of Defense large amounts of money are spent supporting various programs with a pseudoscientific orientation.
- The deputy chief of the President's Security, General G. Rogozin, in addition to his main duties, was involved in astrological forecasts and occultism. At the end of 1998, Mr. Rogozin, on the basis of his analysis of Nostradamus prophecies, predicted the beginning of nuclear war in July and August 1999. Fortunately, today this person is out of the President's circle.
- One academician of the Academy of Natural Science, G. Grabovoy, carried out a psychic check of the readiness of President Boris Yeltsin's airplane. And recently, the *Rossiyskaya Gazeta* (a Russian newspaper) revealed to readers how Mr. Grabovoy took part in underground tests of nuclear weapons in Semipalatinsk where he supposedly investigated the influence of some device, "a crystalline module," on a nuclear explosion. It was asserted that switching on the device makes the force of a nuclear explosion two times lower. But if one can use several such devices simultaneously, the force of explosion could be "nullified." Under present conditions, it was said the device could be used on atomic power stations to serve as a guarantee against accidents.

This entire swindle is apparent to any physicist at once. Nevertheless, I had to carry out the official investigation. It revealed that Mr. Grabovoy never took part in tests of nuclear weapons in Semipalatinsk. Therefore, he did not test "a crystalline module" there. At the same time, it was revealed that this "doctor of technical and phys-math. science" has never defended any theses. In lists of the Italian Academy of Science, "academician" Gravovoy was never mentioned. It is sad that the governmental *Rossiyskaya Gazeta* misled its readers; alas, not for the first time.

In the previous State Duma, a rather strange exhibition was arranged, in which the main subject was the so-called *sofa-extrasens*, which was said to cure nearly a hundred diseases including impotence and frigidity. The same Duma has arranged debates on the problems of the UFOlogical safety of Russian people. To understand how this could happen, I cite the statement of the deputy chair of the State Duma Ecological Committee, doctor of technical science (!) V. Tetelmin:

> Science revealed a sufficient number of examples of natural bioresonance processes affecting the human organism. For example, at the Earth, there are many well-known geopathogenic zones. Their basic property is that there, the procession of time is changing. So scientists detected that precise watches failed in the region where the Tunguska meteorite fell, in regions of nuclear weapons tests, near Chernobyl, and in other "fatal" places. . . . It was noticed that places with anomalous proceeding of time are located there, where there are flows of large amounts of water along the circle.

I hope that it is now clear who could organize such an exhibition and who could try to push through a law on the protection of the "energy-informatic" safety of the population. To the credit of the present Duma, it does not do anything like that.

Alternative medicine has dramatically developed. It is attracting numerous unscrupulous swindlers, robbing sick people who cannot find help from traditional medicine. New medical devices claiming to cure patients of any illness are appearing on the market.

A device called "New Cardiomag" recently became available at a price of only 500 rubles (about $16). It supposedly helps with hypertonia, ischemia, arterial hypertension, stenocardia, and headaches. One might question the honesty of developers of the device since one of them, doctor of medical science A.P. Naumov, has written in an advertisement for the "Cardiomag" the following: "This is an ecologically pure autonomous source of gravitation field, pulse bipolar current, and direct magnetic field with special energy characteristics" (*Isvestiya*, March 14, 2001). In *Isvestiya* of July 24, 2001 a device called "Vita" was described. Do not think that the device is so different from many other useless devices. The one thing that was different about "Vita" is that it had direct lobbying on its behalf by high-ranking officials. The Deputy Minister of Labor and Social Development, V.A. Yanvarev, requested Federal Organs of Executive Power of Federal Subjects "to facilitate head sanitary physicians in introducing the device 'Vita.'"

And a deputy head of sanitary physicians, professor E. Belyaev, impudently recommends "the use of the bioenergetic safety device 'Vita' as an individual protection against electromagnetic radiation at plants and establishments, on the ground, and air transport. . . ." Even if this device could really

protect against electromagnetic radiation, it is improper for high-ranking government officials to be engaged in lobbying. And as Mr. Belyaev ends the letter with the words, "With questions on purchasing the device 'Vita' please address to . . . ," (and then the address and phone of a commercial firm follows), there is a suspicion that the official does not do all this with much objectivity.

Two conclusions can be made about the device: The product "Vita" is not a means of protection against biological action of electromagnetic fields; and the offered technical information and advertising mislead potential customers.

It is incomprehensible why the Academy of Medical Sciences keeps silent about such fraud. It is time to express its opinion about that. The ever-growing activities of pseudoscience attempt to get money from the government, consumers, and industry while avoiding the standard procedures of review by experts. There are many examples of pseudoscientists managing to get money from state sources.

The most well known is the swindle based on so-called torsion fields. In addition, there are some "studies" on antigravity, and on transmutation of elements with an attempt to obtain gold (not involving the known method of nuclear reactions but instead a modern version of alchemy).

In such an atmosphere, at the end of 1998 the President of the Russian Academy of Science, academician Yu. W. Osipov, arranged a special Commission Against Pseudoscience and the Falsifications of Scientific Studies. One of the commission's very first actions was to prepare a special appeal that was considered and accepted by the Presidium of the Russian Academy of Sciences. This appeal was published in many Russian mass media outlets.

Members of the commission appeared many times in newspapers and magazines and on radio and TV, addressing the government with suggestions. I think I can say that this commission and its work with the mass media resulted in some corrections of the situation. Some allies appeared among journalists, astrological forecasts vanished from some newspapers, and some science sections appeared. In addition, scientists more frequently were asked to be guests on TV programs. However, these are only small steps. A victory over pseudoscience is still far away.

To conclude, I would like to recall one more story. About twenty-five years ago, fringe-science swindlers pushed through to the level of the government of France an idea of ever-penetrating rays for finding oil deposits. (How similar it is with our torsion fields!) This speculation was blocked by the president, Valery Giscard d'Estaing, by his words: "Assume it is necessary to find expertise aimed at revealing the possibilities of falsification."

Recently, several members of the 1998 commission (academicians E. Alexandrov, V. Ginzburg, and E. Kruglyakov) sent a letter to the president of Russia, Vladimir Putin. They drew the president's attention to the dangerous growth and influence of pseudoscience in Russia. The first of many suggestions and measures was to seek the expertise of members of the Russian Academy of Sciences in applying the fundamental laws of nature to evaluate projects. We hope that the president of Russia will follow the example of the president of France and apply thorough scientific expertise in examining proposed ideas. If that happens, we will have a chance to witness a cleansing of science from the shameful prevalence of pseudoscience. □

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Second of two parts. Part one appeared in the May/June 2002 SKEPTICAL INQUIRER, with sections on "The Memory Wars" and "Our Search for the Full Story."

Who Abused Jane Doe?
The Hazards of the Single Case History
Part 2

Case histories have played a long-standing role in the history of science, medicine, and mental health. But they can mislead—especially when only half the story is told. Here's a case history about a case history that proves just that.

ELIZABETH F. LOFTUS and MELVIN J. GUYER

Many questions remain unanswered. Did Jane repress and recover an authentic memory of sexual abuse, or did she always remember the charges that cost her mother custody of her? Were those allegations accurate, or is there an alternative that might explain why Jane reported sexual abuse as a child and later came to believe it really happened? What is the truth about Jane's allegedly "burned" feet? Why were John Doe's abuse accusations against Dad never pursued?

A memory is, of course, not proof of the event it purports to recall. We all "remember" things that never actually happened, as ample scientific evidence has demonstrated (Loftus 1997). To take Jane's memory as evidence of an

About this article:

Case histories make contributions to science and practice, but they can also be highly misleading. We illustrated with our re-examination of the case of Jane Doe; she was videotaped twice, once when she was six years old and then eleven years later when she was seventeen. During the first interview she reported sexual abuse by her mother. During the second interview she apparently forgot and then remembered the sexual abuse. Jane's case has been hailed by some as the new proof of recovery of repressed or dissociated traumatic memories, and even as proof of the reliability of recovered memories of repeated abuse. Numerous pieces of "supporting evidence" were given in the original article for believing that the abuse occurred. Upon closer scrutiny, however, there are reasons to doubt not only the "supporting evidence," but also that the sexual abuse ever happened in the first place. Our analysis raises several general questions abut the use of case histories in science, medicine, and mental health. There is a cautionary tale not only for those professionals who advance the case history, but also for those who base their theories on it or would readily accept it as proof.

—The Authors

Also see "The High Cost of Skepticism," Carol Tavris's essay about the Loftus/Guyer investigation into the case of Jane Doe, immediately following their article on page 41.

—The Editors

alleged prior event is to beg the question of whether it is a recovered memory. Instead, we must begin with an inquiry into what was regarded as corroboration of the claim of recollection. Thus we are led back to Corwin's original clinical evaluation.

There was no smoking gun in this case—no first-hand eyewitness accounts from impartial parties, no unambiguous physical evidence of sexual abuse or even of old burns. Corwin rests his corroboration of Jane's memory upon his *clinical opinion* that the alleged abuse occurred. The claim of corroboration naturally takes us to questions about the nature of clinical child abuse evaluations and their validity and reliability in general, and in this case in particular. Child sexual abuse is not a diagnosis. Instead such cases typically involve an effort to postdict—to say, on the basis of record review, contemporaneous observations, and credibility judgments whether some event did or did not occur in the past—an enterprise typically outside the scope of mental health expertise.

Can clinicians postdict with accuracy whether child sexual abuse occurred? Based upon a substantial body of scientific research, much of it done after Jane's 1984 evaluation, we have learned many sobering things about the limitations of clinical expertise in the postdiction of child sexual abuse.

1. We know that clinical judgments of alleged sexual abuse may be unreliable (Horner, Guyer, and Kalter 1993a, b). Even experienced evaluators of child claims disagree markedly.
2. We know that clinical judgments concerning the credibility of children's statements are not reliable (Ceci and Huffman 1997, Ceci, Loftus, Leichtman, and Bruck 1994), nor are clinical judgments concerning the credibility of adults particularly reliable (Ekman and O'Sullivan 1991).
3. We know that there are few, if any, specific behavioral indicators of child sexual abuse (Kendall-Tackett et al. 1993), and to rely upon any one or two behavioral indicators will result in many false positives.
4. We know that false allegations of child sexual abuse find fertile ground in highly contested child custody/visitation cases and that these are the most suspect cases in which allegations of abuse arise (Benedict and Schetky 1985). We know that children in such circumstances are often subject to so much parental influence that they sometimes lose the capacity to accurately report their own experiences.
5. We know that children, especially young ones, can be made to recall events that have not occurred, especially if they are questioned about them in suggestive and leading ways.
6. We know that interviewers and evaluators who have an expectation bias can influence the recollections and reports of their subjects to be congruent with their bias.
7. Finally, we know that multiple interviews and repeated and prolonged evaluations erode the capacity of people to obtain trustworthy data from child witnesses. Indeed, the study of the malleability of children's memory constitutes an important area of memory research, and much of it has developed only in the last ten years (Ceci and Bruck 1995).

What does all this mean for Jane Doe's case? The claim of recovered memory here is founded upon a type of corroboration that in general terms is highly unreliable and invalid, though it was standard throughout the 1980s and 1990s. It is doubtful, for example, whether the clinical evaluation method of assessing abuse allegations would pass the "junk science" test set out by the United States Supreme Court in *Daubert* v. *Merrill Dow*, given the demonstrated lack of agreement among clinicians in these sorts of cases. (At the time of Corwin's 1984 evaluation of Jane, however, the American Academy of Child and Adolescent Psychiatry had not yet promulgated its guidelines for assessing allegations of child sexual abuse and would not do so for several more years.)

To the extent that Jane's memory can be regarded as an instance of a recovered, accurate memory, there must be some objective and independent corroboration of the events she purports to remember. If Corwin's evaluation is to serve as the corroboration of Jane's alleged abuse, it must lay some strong claim to the measure of reliability, validity, and objectivity

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upon which scientific claims are founded. We have argued that clinical evaluations of abuse allegations, in general, do not have the desired indicia of reliability necessary for corroborating scientific theories. There is nothing that we can see in Corwin's evaluation that distinguishes it from ordinary, subjective clinical assessments, or that allow him to make some special claim to objectivity and reliability.

Nonetheless, other important questions remain:

Even if there was no corroboration of sexual abuse, was there not corroboration of Jane's burned feet?

We learned from StepMom that Jane was taken to two hospitals on the same day to get as much documentation about the burned feet as possible. We learned from other sources that Jane had a fungal condition that could have been responsible for injuring her feet. We learned from FosterMom that Mom apparently did not have the type of stove that was supposed to have been used to burn Jane's feet. We could not access Jane's medical records, of course, because of confidentiality, but we did have descriptions about the burned feet provided in one of the CPS worker's reports. We then contacted Edwin Carlson, M.D., who was director of the emergency room at one of the hospitals where Jane was taken for examination of her feet. In response to the diagnosis of almost completely healed second-degree burns, Dr. Carlson told us: "A physician cannot tell the cause of sloughed skin when the area is healing. The sloughed area is caused by vesiculation and it in turn has many etiologies including thermal and chemical burns, exfoliative dermatitis secondary to a drug reaction, bacterial and fungal infections. Therefore the etiology in the diagnosis is related as past history by the patient or the patient's guardian."

He added that if there had been any suspicious circumstances, the chance of a report not being filed with Child Protective Services was near zero, especially with the above diagnosis. We also contacted an Emergency Room nurse who knew a great deal about the standard of care at one of the hospitals where Jane had been taken to have her feet examined. She told us that during 1982 (the year Jane was taken to have her feet examined), any suspected child abuse was reported immediately to CPS unless there was an investigation in progress in another county, that the CPS offices were in a building immediately adjacent to the hospital where Jane was taken, and that the staff were on call twenty-four hours a day. "We erred on the side of the child concerning the report," she told us. She implied that there must have been significant doubt that the "burns" were a result of child abuse.

If Mom did not sexually abuse Jane, why did Jane report abuse when she was six years old?

One possible answer: StepMom and Dad—"The Sexual Angle." A thorough examination of the data lead us to propose another equally plausible hypothesis about what happened, one that does not involve sexual abuse. Mom and Dad were involved in a prolonged and nasty divorce and child custody battle. Even allegations of deliberately burned feet had not succeeded in getting Mom out of the picture. StepMom seems to despise Mom to this day. Did she, with or without Dad's involvement, see a way to finally get rid of Mom once and for all? "The sexual angle" is the phrase StemMom used in her interview with us when asked about the initial reports of abuse. Did StepMom question Jane in a suggestive manner? Mom obviously bathed her daughter Jane, and perhaps she might accidentally have poked her. Perhaps it was ordinary bathing with vaginal and anal cleansing of the type done by many parents. Did StepMom misconstrue Jane's honest accounts of how her mother bathed her? Did she reinforce suspicions and reports of sexual abuse? Documentation from that period reveals that StepMom was the first person to whom Jane "reported" sexual abuse; only later did she tell this story to others. This is only one of the ways that Jane may have come to report sexual abuse if in fact none occurred, but there is contemporaneous documentation that is consistent with this hypothesis.

If abuse did not occur, why were so many people—including Jane herself—persuaded that it did on the basis of the videotaped interviews of Jane at six?

When someone recounts an event, especially if it is detailed and accompanied by emotion, it can be very persuasive (Bell and Loftus 1989). Jane herself was persuaded when she saw herself on tape, as were many knowledgeable scientists. Where would all that emotion and detail come from, many people assume, if the recounted events didn't happen? But of course the fact that a person has come to believe that something happened does not mean it actually did. The belief can be absolutely real and heartfelt without being correct. People who believe they were abducted by aliens, people who believe they were kings and princesses in past lives, people who believe they can recall being born (or being cramped in the womb) will also give detailed, emotional, and persuasive reports of their "memories," but it seems unlikely that they are right. Thus, Ekman could have been absolutely right in his assessment that Jane's "emotions" at age six were authentic—and absolutely wrong that she was having an authentic memory.

Where did the pornography accusations come from?

Numerous commentators have puzzled over the accusations of pornography. Corwin and Olafson's original article repeated Jane's accusations: "I accused her of taking pictures of me and my brother and selling them," Jane recalled at age seventeen (Corwin and Olafson 1997, 105–106). Neisser suggested that the pornography accusations were false: "Jane has clearly 'remembered'—and been very upset by—something that never took place" (Neisser 1997, 123). Based on our interviews, we think that these accusations may have originated in the mind of StepMom and were communicated to Jane. They were denied by Jane's older brother John, who was supposed to have participated. They were denied by Mom. No reports or documentation exist to substantiate them. They almost certainly would have been noted in police reports, therapists' notes, or other documents had they been mentioned.

The Ethics of Exploring Jane Doe's Case

Are our efforts to examine this case study ethical? Was it appropriate for us to track down information, reassess the evidence and claims, and come to a different conclusion than Corwin's?

We consulted Thomas McCormick, a physician whose specialty is medical ethics at the University of Washington. McCormick offered a hypothetical situation in which a professional has published a case history claiming that he cured cancer with marijuana leaves and Crisco. Oncologists would naturally have many questions to ask of this case study: Did it really work? If the patient seems to be in better health after the "treatment," did he or she really have cancer in the first place? Would it be ethical for a physician to talk to the "case history" and to examine the original doctor's data?

McCormick thinks so, and so do we. The essence of science is its openness to examination by one's peers. Claims ought to be subject to peer review; facts must be available for verification or criticism; and findings ought to be reproducible. When an author puts forward a hypothesis based upon a case study that he maintains is true, one that he uses to defend his theory, others are entitled—indeed obligated—to scrutinize the methods and findings as long as this can be accomplished without undue harm. In the case of Jane Doe, we followed the trail left by Corwin, and we tracked down many documents pertinent to her case, and met a few individuals who knew her. We found a great deal of material that was damaging to his claims. What we did was reminiscent of the work of scholars who reexamined Freud's case of Dora, discovering crucial information about her that Freud neglected to tell his readers. Reanalyzing a case study does require detection skills.

Readers may wonder why we did not speak to Jane Doe herself. We thought long and hard about doing this. Although we obtained recorded permission from Jane's mother to contact her daughter, we worried that such contact might be upsetting to Jane—and she had surely been upset enough in her troubled young life. Given that Jane's own account at this point might well not shed additional light on the "case study," as her beliefs had potentially been so contaminated, we decided not to risk upsetting her.

Corwin and Olafson and some of the commentators proposed a new "research paradigm": future studies could take advantage of the existence of vast numbers of decades-old tapes of children making sexual abuse allegations. Adults like Jane who had been videotaped in childhood, reporting that they had been abused, could be recontacted to explore their memory of the childhood trauma. Adults like Jane could be shown their childhood tapes, as Jane was. Lindsay (1997) urged careful consideration of this idea, and after seeing what followed in Jane's life, we agree. We think this method is risky—indeed, potentially catastrophic.

If the abuse never happened in the first place, the adult-child may be mistakenly led to believe that it did because she does not understand that there are reasons why a child might make an abuse report even when no abuse had occurred. She may be led to act on the basis of this "new information" in ways that she would not have otherwise acted, with results devastating for her and others. In this case, for example, Jane terminated her newly reforming relationship with her mother after seeing her childhood tapes. No one counseled her that her age six statements, however dramatic, might have been the result of suggestion. Moreover, according to many sources, prior to Corwin's intervention, Jane was frequently questioning her "memories," talking about them, wondering what "really" happened. Did her 1995 contact with Corwin push her over from uncertain to certain?

Postscript

Our efforts to critically evaluate this claim of the recovery of a repressed memory were met with unexpected and unsettling obstructions. Critics of our inquiry, some of whom shielded themselves in "confidential" memos and anonymous allegations of our supposed wrongdoing (memos to which we were denied access and hence opportunity to respond), were able to impede the publication of our work for more than two years. Indeed, our respective universities issued chilling warnings to us that we were to avoid the publication, in any forum, of any of this material, even that which is in the public domain and readily found by anyone with access to a modem and Google search engine. Our vindication, and concomitant recognition of our constitutionally protected speech, was wrested from the academy not by the shield of "tenure" and its intended protections of the spirited exchange of intellectual ideas, but through the costly (emotionally, professionally, and financially) retention of private counsel. We are alarmed on behalf of all members of the academic community that our universities, institutions that above all others should be championing the right to free speech and academic debate, so implacably opposed it in this instance.

Jane Doe's case continues to be offered as proof of the authenticity of repressed or dissociated memories in many venues, including court cases involving other, potentially innocent, accused individuals.

Jane terminated her newly emerging relationship with her mother after Corwin came back into her life and replayed her childhood tape. Her mother lost her once, long ago in 1984, and lost her again in 1995. At this writing they are not in contact with one another.

Acknowledgments

We are enormously grateful to Carol Tavris, so generous of her time and her talent, a veritable muse. Many other individuals, friends and colleagues, provided valuable insights and editing assistance.

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WHO ABUSED JANE DOE?

Continued on page 44

This article chronicles the tribulations noted psychologists Elizabeth Loftus and Melvin Guyer were put through for conducting the investigation that is the subject of their two-part article "Who Abused Jane Doe?" concluding in this issue of the SKEPTICAL INQUIRER *(Pages 37–40).—The Editor*

The High Cost of Skepticism

Here's what happened to two scientists who believed that tenure and the First Amendment would protect their rights to free inquiry.

CAROL TAVRIS

In the olden days, perhaps twenty or thirty years ago, academic debates were marked by sweet discourse and the harmonious if impassioned hum of debate. (Also by sarcasm.) The rule used to be that if you disagreed with someone's opinion or interpretations of data, you did the civilized thing—you called the person a knucklehead or an incompetent fool. Or you wrote a devastating reply explaining why the knucklehead was terminally wrong, misguided, or drunk.

That was then. Just as noise trumps silence and rage trumps courtesy, the cudgel of lawsuits to silence or cower the opposition trumps free debate. In universities across the country, lawsuits, even spurious and unsuccessful ones, have weakened the once-sacrosanct guarantees to scholars of free

speech and association. Institutional Review Boards (IRBs) and Human Subjects Committees have proliferated, to protect human subjects from harm caused by unethical scientists—and to protect universities from any lawsuits that might ensue.

Of course some scientists have conducted dangerous and/or unethical research. I do not disapprove of efforts to assure the safety of subjects any more than I do of lawsuits to punish those who plagiarize, commit libel or fraud, or maliciously destroy reputations. But all institutionalized efforts to correct one problem will inevitably create other problems. Today, many of the IRBs originally established to protect subjects have instituted so many byzantine restrictions and rules that even good scientists cannot do their work. Some have become fiefdoms of power—free to make decisions based on caprice, personal vendettas, or self-interest, and free to strangle research that might prove too provocative, controversial, or politically sensitive.

The growing power of IRBs in academia, along with the increasing number of restrictions on free speech in the politically correct name of "speech codes" and "conduct codes" (described so well by Alan Kors and Harvey Silverglate in *The Shadow University*), is perilous for independent scientific inquiry. For years, the skeptical movement, which had its birth in the domain of philosophy and the study of logic, has tended to regard failures of skeptical and scientific thinking as failures of reasoning—something amiss in human cognition. The underlying assumption has been that if we can only get people to think straight, junk their cognitive biases, and understand the basic principles and methods of science, pseudoscientific reasoning will become as vestigial to the mind as the appendix is to the body.

Perhaps, but the skeptical movement needs also to focus its energies on the growing *institutional* barriers to free inquiry, and the efforts to silence those whose inquiries make waves. The story of what happened to Elizabeth Loftus and Mel Guyer when they set out to investigate the case of Jane Doe is itself a case study of the high cost of skepticism.[1] The two demonstrated exactly the kind of openminded spirit of discovery that is at the heart of the skeptical movement. For their pains, they found themselves in an Orwellian nightmare.

The irony is that if Loftus and Guyer were journalists, they would have done precisely the same investigation unhampered and fully supported by their employer. But because they are university professors, they were subjected to a secret, shadowy investigation of their legal right to do what good reporters do every day. And their respective universities, far from supporting their intellectual inquiries and their tenured (indeed American) right to free speech, obstructed and harassed them. Some of these obstructionist efforts linger in the articles they wrote in this magazine ["Who Abused Jane Doe?" May/June and July/August 2002]. If a writer for, say, *The New Yorker* or *The Atlantic* had conducted such an investigation, you would know the city and state of all of the individuals interviewed, their names (unless they requested anonymity), the data bases the investigators used to gather information—in short, you would know the details. But Loftus feels she is still not at liberty to provide these details in print, and that her university is still looking over her shoulder.

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Who Abused Loftus and Guyer?

After reading David Corwin's account of Jane Doe in the journal *Child Maltreatment* in 1997, Loftus and Guyer decided to examine his alleged evidence of a recovered memory of sexual abuse. The stakes were high for their work as scholars, teachers, and expert witnesses, because the case was already being used in court as evidence that recovered memories of sexual abuse in childhood are reliable.

They began by looking into documents in the public record. They found a public court case of "Jane Doe" who fit the description in Corwin's article, but the court records differed from Corwin's account in significant ways. They eventually met Jane Doe's mother, and became convinced that she had been falsely accused many years before, leading to the loss of custody of her daughter. They decided that this was a story worth pursuing and publishing, ideally in a popular magazine.

In the spring of 1998, Guyer contacted the administrator of the University of Michigan's IRB to make sure the committee shared his view that he did not need their approval because he was not doing "research" but rather "intellectual criticism, commentary on a forensic issue, and an historical/journalistic endeavor." The administrator and the then-chair of the IRB, Sumer Pek, agreed; Guyer's investigation would be exempt from IRB oversight.

A month later Guyer received a letter, with no intervening warning that anything was amiss, telling him that his project was *not* exempt; in fact, that it was assigned a "disapproval" status; and that the IRB was recommending to the Office of the Vice President of Research that he, personally, be reprimanded.

The Catholic Church has given up limbo, but not, apparently, university IRBs. Appeals, protests, and exchanges ensued for nearly a year. In March 1999, Guyer received a letter from the new chair of the IRB, Stephen Gebarski, telling him that his work was indeed exempt from IRB consideration because it was not "human subjects research." The OVP Research office concluded that there was no basis for a recommendation of "reprimand." Guyer was given no explanation of the year-long delay, although Gebarski did apologize for any "misunderstandings" that might have occurred that year. He added that he was personally "[looking] forward to seeing your interesting historical journalistic work published in the appropriate forum."

Encouraged by the green light given to Guyer at Michigan, the two pursued their investigation. Then the University of Washington received an e-mail from Jane Doe, complaining that her privacy was being violated. Considering that David Corwin had *published* his account of her life and was traveling around the country showing videotapes of Jane at six and seventeen, and considering that no one was making her story

public (and hence violating her "privacy") except Jane herself and Corwin, this complaint should have been recognized as a cry from a troubled and vulnerable young woman, and set aside. Instead, it was enough to set in motion a series of endlessly shifting charges against Elizabeth Loftus, a scientist of international stature who had brought luster and prestige to her university for more than twenty-five years. The "investigation" against her lasted more than twenty-one months, in spite of the University's own statute of limitations—thirty days for the selection of a committee and ninety days for its deliberations—for bringing all such investigations to a conclusion.

On September 30, 1999, having given Loftus fifteen minutes' advance notice by telephone, John Slattery of the University of Washington's "Office of Scientific Integrity" arrived in Loftus's office, along with the chair of the psychology department, and seized her files. She asked Slattery what the charges against her were. It took him five weeks to respond, and when he did he had transformed Jane Doe's "privacy" complaint into an investigation of "possible violations of human subjects research." Loftus later learned that lawyers in another state, who had retained Corwin as their defense expert, were trying to subpoena her personnel file in hopes of finding something there to discredit her as an expert witness for the plaintiffs. Because the University, in the face of her objection, was going forward in complying with this improper subpoena, she was forced to retain her own lawyer to stop them. (Because it was from out of state, it had no force of law or validity in Washington.)

In February 2000, Loftus and her lawyer dislodged some documents from the University's investigation, and found among them a "Confidential Memo" written by Stanley Berent, a neuropsychologist who was on the IRB at the University of Michigan —*Guyer's* IRB. This memo had played a crucial role in the decision to reprimand Guyer and deny him the right to continue his work, yet Guyer was never even told it existed. Berent's memo, Guyer says, "was the harshest document, filled with false innuendo, malicious insinuations, and outright falsities. Keeping it secret from me denied me the opportunity to correct its mischaracterizations." To this day Guyer has been unable to get his own university to provide him with a copy of this memo, even after repeated requests under the Freedom of Information Act. Yet a University of Michigan lawyer was happy to send it directly to the investigating committee at the University of Washington, to be used against Loftus. This was the modus operandi at both universities: keep the charges secret, keep changing the charges, keep the meetings secret, keep the accused in the dark.

In the spring of 2001, the three-member investigating committee, consisting of two clinicians and one sociologist, concluded that Loftus was not guilty of the charge of "scholarly misconduct." But the two clinicians recommended to the dean, David Hodge, that she nonetheless be reprimanded and subjected to a program of remedial education on professional ethics. They instructed Loftus not to publish data obtained by methods they regarded as inconsistent with the "ethical principals" [*sic*] of psychologists—that is, the methods of a journalistic investigation.

On July 3, 2001, one year and nine months after the University of Washington seized her files, and one month after Loftus won the prestigious William James award from the American Psychological Society for her decades of scientific research [see SKEPTICAL INQUIRER, November/December 2001], Dean Hodge wrote Loftus a letter of exoneration. Her work, he said, "does not constitute research involving human subjects." She did not commit ethical violations or deviate from accepted research practices. She was not guilty of any misconduct. She would not have to undergo remedial education on how to conduct research.

But, oh, one more thing: She was not to contact Jane Doe's mother again or interview anyone else involved in the case without advance approval. Such meetings, he said, would constitute "human subjects research requiring Human Subjects Committee approval."

The Enemy Within

And there it stands: Loftus and Guyer won; their investigation was published in these pages; but at tremendous cost. Loftus still feels bitter at the dean's restrictions, which she and Guyer regard as blatant violations of her First Amendment rights. Guyer is still outraged by Stanley Berent's peculiar and devious memo, not knowing to whom else it was improperly sent or who might next use its innuendos and lies against him.

Of course, their investigation of Corwin's claims was bound to enflame passions: those of Jane Doe herself, an unhappy young woman whose life has been filled with conflict and loss; those of David Corwin, who has publicly promoted his case study as a personal vindication and a prototype of how recovered memories should be studied; and those of the many clinicians who still cling to the discredited concept of repressed memories. Loftus and Guyer knew they had enemies. They hadn't known that some of them were at their own universities, and that the shields of tenure and the First Amendment would not be sufficient protection.

"I don't see how you can write anything of value," the great anthropologist Marvin Harris told me years ago, "if you don't offend someone." Skeptical inquiry is endangered when those who are offended or threatened by knowledge are able to silence those who have something valuable to say. The lawsuit path is crowded because those who take it face no negative consequences: The worst that can happen to them is nothing at all—their target doesn't budge. But often the targets of these threats, weary of being harassed, unable to pay the costs of self-defense, frightened at the prospect of losing their reputations, and unsupported by their publisher or university, do back down. The offending passage is deleted, funny but sarcastic remarks toned down, safer topics chosen, documented evidence of the target's malfeasance removed.

That is why we must be all the more grateful for the courage, persistence, and integrity of those skeptical inquirers who are still willing to "offend" in the pursuit of truth and justice, heroes like Elizabeth Loftus and Mel Guyer.

Postscript

Institutional Review Boards misuse their power not only when they impose excessive and unnecessary restrictions on free speech in the name of protecting subjects; but also when financial interests influence their approval of research that *is* potentially harmful to subjects. Consider this irony: Stanley Berent's confidential memo excoriated Mel Guyer for his alleged scientific and ethical lapses—among them, failing to get Jane Doe's consent to call her *mother*, who was eager to tell them her side of the story; failing to enlist the "ongoing cooperation" of Corwin(!), as if Corwin would have granted it; and failing to consider whether this "research" might have "a negative effect upon the dignity and welfare of the participant." Yet at the very same time, Berent got permission from his own IRB (of which he was a member) to conduct research with, in my view, far graver implications for the dignity and welfare of his subjects.

The Michigan IRB had granted approval for Berent and his associate James Albers to retrieve medical records of railroad workers who had been exposed to dangerous solvents. The workers were suing their employer, CSX Transportation Inc., and Dow Chemical, claiming that exposure had caused brain damage and other medical problems. Berent and Albers, hired by CSX and Dow, examined the medical records—*without the workers' knowledge or consent*—and concluded that there was no connection between the workers' medical problems and their exposure to solvents.

An investigation conducted by the University of Michigan found no conflict of interest in Berent and Albers' behavior and no need to obtain the workers' informed consent, because Berent and Albers' conclusions about the workers were based on "existing non-research data." (Just the kind of data Loftus and Guyer used.) However, the Office of Human Research Protections at the U.S. Department of Health and Human Services is continuing its investigation of Berent and Albers' potential conflict of interest. Berent has taken early retirement.

Note

1. In the interests of full disclosure, I am a friend of both Loftus and Guyer, and I write this essay as a concerned observer, not as a disinterested reporter. Their experiences described here are accurate, but I did not interview administrators or investigators to get "their side." □

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Tracing Graham Hancock's Shifting Cataclysm

An examination of a specific portion of Graham Hancock's book Fingerprints of the Gods, *relating to Earth Crustal Displacement, the climates and fauna of Siberia and Alaska, and the deaths of the mammoths, finds it to be critically flawed.*

MICHAEL BRASS

By the late 1960s the modern theories of continental drift and plate tectonics had become firmly established in geological thought. They had survived close scrutiny and challenges from competing hypotheses and propositions, both within and outside the scientific community. One of the most prominent unorthodox interpretations put forward was Charles Hapgood's "Earth Crustal Displacement," which was never accepted as a truly valid competing scientific hypothesis (and Hapgood was not part of the geological community). Popularized in his 1958 book *Earth's Shifting Crust: A Key to Some Basic Problems of Earth Science,* the Earth Crustal Displacement idea has re-emerged in alternative circles in the last decade. Its most vocal supporters are the librarians Rand

and Rose Flem-Ath and the journalist Graham Hancock. Hancock based a large portion of his book *Fingerprints of the Gods* (1995, revised 2001) on Hapgood's evidence for catastrophe at the end of the Last Glacial Maximum, 12,000 B.P. (before present).

In *Fingerprints of the Gods,* Hancock hypothesizes that the demise of the mammoths and other megafauna was caused by a catastrophic cataclysm brought on through an Earth Crustal Displacement.

Earth Crustal Displacement is based on the premise that Earth's lithosphere (the outer part of the rocky Earth, about the uppermost 80 kilometers or 50 miles) has shifted *as a whole* at different times in the past over Earth's interior. Hancock (1995, 11) went so far as to claim no geologist "*has succeeded in proving it incorrect.*" Results from pollen analyses have revealed patterns of climate change that are at odds with the inherent predictions of the Earth Crustal Displacement model. Studies have shown that the Polar regions have either contracted or expanded toward the equator, but have never shifted their positions as required by Earth Crustal Displacement. The CLIMAP Project (1981) reconstructed climatic zones during the Last Glacial Maximum and the results obtained shows the North and South Poles (and the equator) in the same position as today. Paleontological data, summarized by Thiede et al. (1990), reveals that the Arctic Ocean has continuously experienced polar climates, almost permanent ice cover and glacio-marine sedimentation for all of the Late Cenozoic since the mid-Pleistocene. Phillips and Ganze (1997) reconfirm that, regardless of how the climate has varied in the Arctic Polar regions, they have been colder than the oceanic areas south of it for at least the past 7 million years. Earth's lithosphere is attached to the mantle in such a way as to make Earth Crustal Displacement impracticable. The mechanism for Earth Crustal Displacement was postulated to be the sheer weight of the ice built up over time; this caused the crust to shift through unequal weight distribution. However, this weight is compensated for by isostatic depression of the crust. Finally, there is no paleomagnetic evidence for Earth Crustal Displacement having occurred.

In *Fingerprints of the Gods,* Hancock hypothesizes that the demise of the mammoths and other megafauna was caused by a catastrophic cataclysm brought on through an Earth Crustal Displacement. The result was that "terrible forces were unleashed on all living creatures during the last Ice Age" and that "the northern regions of Alaska and Siberia appear to have been the worst hit by the murderous upheavals between 13,000 and 11,000 years ago. In a great swathe of death around the edge of the Arctic Circle the remains of uncountable numbers of large animals have been found—including many carcasses with the flesh still intact, and astonishing quantities of perfectly preserved mammoth tusks" (Hancock 1995, 212, 213). Hancock makes a case for Siberia having experienced a warm climate before 11,000 B.P. and contrasts it with the conditions seen there today. As evidence, Hancock focuses on stomach contents: "The mammoth died suddenly, in intense cold, and in great numbers. Death comes so quickly that the swallowed vegetation is yet undigested. . . . Grasses, bluebells, buttercups, tender sedges, and wild beans have been found, yet identifiable and undeteriorated, in their mouths and stomachs" (Hancock 1995, 215–16). The source for the quote by Hancock is a 1960 newspaper article by Ivan Sanderson. Hancock (1995, 216) also claims: "Needless to say, such flora does not grow anywhere in Siberia today. Its presence there in the eleventh millennium B.C. compels us to accept that the region had a pleasant and productive climate—one that was temperate or even warm. . . . What is certain, however, is that at some point between 12–13,000 years ago a destroying frost descended with horrifying speed upon Siberia and has never relaxed its grip. In an eerie echo of the Avestic traditions, a land which had previously enjoyed seven months of summer was converted almost overnight into a land of ice and snow with ten months of harsh and frozen winter."

The positions and actions of ice sheets are more complicated than the blanket portrayal in *Fingerprints of the Gods.* The Barents Ice Sheet covered most of northern Russia and goes unmentioned in *Fingerprints of the Gods,* as do the reasons behind why Siberia was not all covered in ice. Siberia lay west and southwest of where the Barents Ice Sheet had formed. There was insufficient snowfall to create enough ice to expand the Barents Ice Sheet into Siberia. Chinooks blowing down off the ice sheet, moderating the climate of the area in front of them, was the cause of the insufficient snowfall. North America was also subjected to its own chinook winds. As has been documented with the Sierra Nevadas and other mountain ranges, the air descending 2–3 km from the top of an ice-sheet would be heated up to an average of 4–7 degrees centigrade. The areas of Siberia and North America in front of the ice-sheets would have experienced a milder winter than present, although their summers were colder, which resulted in more conducive conditions for plant growth and for animals than those currently experienced. Moreover, a rain shadow was cast over Siberia by the ice sheet, and the Arctic Ocean, covered in ice, could provide little moisture for precipitation over Siberia. This scenario was tested by COHMAP (Cooperative Holocene Mapping Project) members (1988) who found a dry

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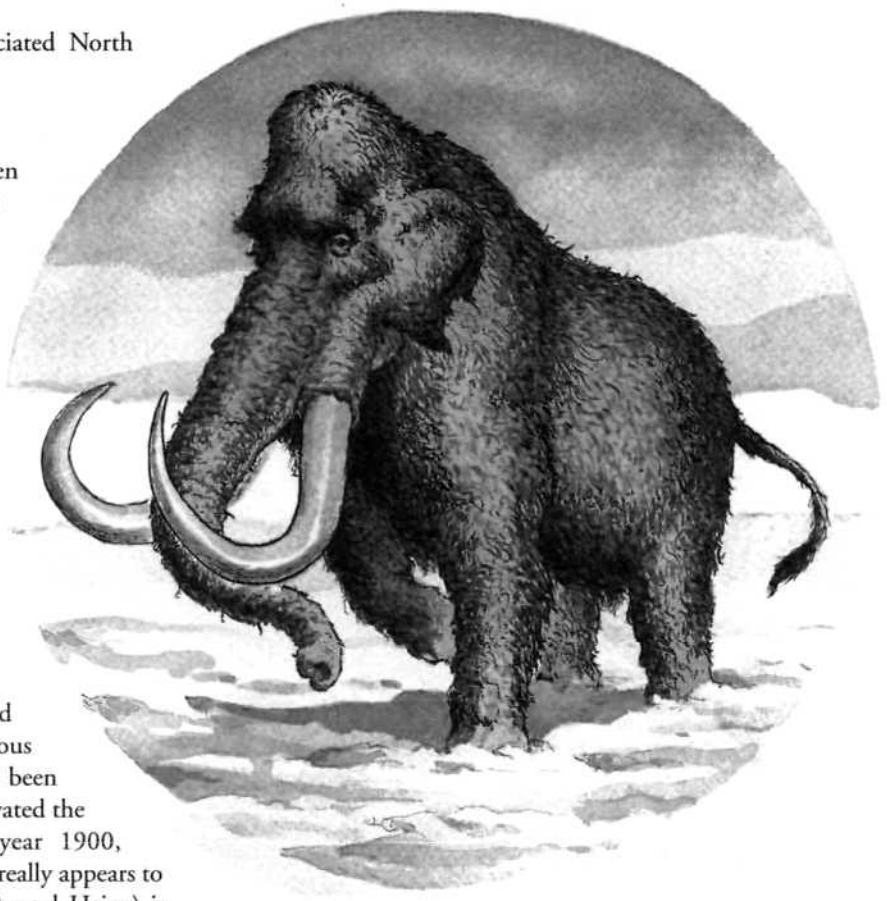
Siberia, a glaciated Barents Sea, and a glaciated North America to be compatible.



The Frozen Mammoths

Claims that the mammoths were quick-frozen have been propounded for decades and were disputed by Zimmerman and Tedford as long ago as the mid-1970s (1976, 183): "Histologic examination of rehydrated tissue samples from late Pleistocene Alaskan mammal mummies demonstrates that the preservative effect of freezing and drying extends to remains 15,000 to 25,000 years old. Some muscle and liver retained identifiable histologic structures. Most tissues were completely disintegrated and partly replaced by masses of bacteria, an indication of considerable post-mortem decay before the remains were entombed beneath the permafrost zone."

These points were taken up and elaborated upon further by Kurten (1986, 51–2): "Various legends exist about frozen mammoths. It has been said, for instance, that the scientists who excavated the Beresovka mammoth, discovered in the year 1900, enjoyed a banquet on mammoth steak. What really appears to have happened (as I was told by Professor Anatol Heinz) is that one of them made a heroic attempt to take a bite out of the 40,000 year old meat but was unable to keep it down, in spite of a generous use of spices... The facts are not hard to find. In 1902, Otto Herz, a zoologist at the Imperial Academy of Sciences in St. Pietersburg published in German an account of the expedition *to* the Beresovka River which he had led the year before, with the purpose of salvaging the mammoth carcass that had been discovered in 1900. . . . The point here is this: Herz definitely states that it was only the superficial part of the cadaver that had been preserved. The internal organs had rotted away before the animal had become frozen."

Claims that the mammoths were quick-frozen have been propounded for decades and were disputed as long ago as the mid-1970s.

"Blue-babe," a mammoth that perished 36,000 B.P., was discovered with its chest cavity torn open by predators, which allowed its body to be quick-frozen. If it had been catastrophically frozen, it would have been too hard to tear open and be feasted upon. Second, its predators should have been quick-frozen by the same catastrophe that overcame their feast.

The size of the mammoths was an adaptive advantage to the cold environment in which they lived, and not to the warm environment postulated by Hancock. Low surface-to-body ratios help to reduce passive heat loss through the skin. They had small ears and trunks by comparison with their African elephant cousins, who use their large ears and trunks to dissipate the heat. The mammoth's body was cold-adapted in other ways. They had a 10cm thick undercoat, 50cm long body hairs and a 10cm layer of white insulative fat under the skin. The woolly rhinoceros, *Coelodonta antiquitatis*, also had a shaggy coat and a layer of extra fat underneath its skin. Mummified remains of these rhinos have also been found in the permafrost.

Permafrost Plants

The plants and pollen found within the mammoths, together with the remains in the surrounding sediments, consist entirely of plant varieties adapted to cold climates. The plant remains found in the guts of the mammoth and other mummified animals from Siberia have been analyzed and summarized in detail by Ukraintseva (1993). Further work on the climate of Siberia by Russian paleontologists, paleobotanists, and geologists has also been summarized in Ukraintseva (1993). Siberia was not dominated by tundra when the mammoths

lived. As Ukraintseva (240) points out, "Integrated investigations threw light on environments of the concrete specimens of fossil animals discussed here and the 'mammoth' fauna as a whole. Most of the mammals died in warm periods during the last 53,000–10,000 years when the vast territory of Siberia was covered by various forests, paludal communities and bogs, whereas communities of azonal character (meadows, steppe meadows, and others) which served as pastures to the mam mals sharply reduced in area." Ukraintseva also says: "Cold (glacial) epochs were dominated by open, treeless landscapes such as arctic meadows, various tundras, periglacial steppes. Remains of fossil trees, dated by C^{14} analysis, suggest that woody plants did not disappear completely during short cold phases of the last Pleistocene and Holocene. They remained as small forests and separate trees in the river valleys and serves as peculiar advanced posts for forest advance northwards at warm periods." The arctic meadows, tundras, and steppes contained the herbaceous plants, leaves, and sprigs of shrubs and low shrubs needed for the mammoth to feed on and survive in glacial Siberia. The mammoths also had complex molars that were ideally suited for its macrograzing habitats. These data were available to Hancock when both editions of *Fingerprints of the Gods* were published.

The problem is that the winters had to have been cold enough to freeze and mummify the remains, and the summers warm enough to melt the permafrost and produce mudflows to bury the carcasses.

The problem is that the winters had to have been cold enough to freeze and mummify the remains, and the summers warm enough to melt the permafrost and produce mudflows to bury the carcasses. If the summers were too cold then mudflows wouldn't have occurred and the carcasses be buried and preserved; if the winters were too warm, the carcasses would have been decayed or been devoured fully by predators before being preserved. The remains of Pleistocene mammals in Alaska and Siberia have been discovered in permafrost, which resulted in the body tissue being preserved through desiccation-induced mummification.

The end of the Last Glacial Maximum was a continuation of cyclical events occurring over hundreds of millions of years, which has its origins in slow cyclical changes in the tilt of Earth and Earth's eccentric orbit around the Sun. Although the latter is mentioned in Chapter 28 of *Fingerprints of the Gods*, entitled "Machinery of Heaven," its implications are not discussed. These two Milankovitch factors combine to vary the amount of solar radiation different areas of Earth receive at different times in accordance with orbital forcing. Current cycles last 100,000 years and are affected also by ocean currents and the rise and fall of mountain ranges. In-depth analyses have been undertaken and presented by John and Katherine Imbrie (1979), as well as Wally Broecker and George Denton (1990).

The climate changes that affected the habitats of the mammoths, and other mammals, at the end of the Last Glacial Maximum have been eloquently and concisely expressed by Vereshchagin and Baryshnikow (1984, 506–7): "Winters with little snowfall and the development of a luxuriant grass cover on hard, dry ground with abundant summer insolation allowed horses, bison, and saiga to occupy huge expanses of northern Eurasia. The boundary between the Pleistocene and Holocene was characterized by sharp, short climatic oscillations: The Bølling interstadial (12,400–12,000 yr B.P.), the Middle Dryas stadial (12,000–11,8000 yr B.P.), and the Allerød interstadial (11,800–11,000 yr B.P.), the Upper Dryas stadial (11,000–10,300 yr B.P.), and so forth, which affected the Pleistocene species decisively. It was precisely in this time range that the massive extinction of the mammoths and their 'fellow travellors' occurred in the arctic zone. Testimony to this extinction are the hundreds of thousands of bones from disarticulated skeletons and the occasional frozen carcasses buried in Sartan deposits (late Wisconsin) in northern Yakutia and on the Tajmyr Peninsula. Judging from modern examples of mass death among wild and domestic ungulates in the Kazakhstan steppes, the best explanation for such death at the end of the Pleistocene is the frequent occurrence of snowstorms (blizzards) in winter and the transformation of the nutritious Pleistocene tundra-steppe into a boggy, lake-dotted tundra. In subarctic latitudes at this time, taiga and mixed-forests advanced rapidly onto open expanses, and a forest fauna developed. From the paleozoologist's point of view, the most convincing proof that the landscape changed radically on the boundary between the Pleistocene and Holocene is the change from a steppe, mammoth fauna into a forest fauna on the Russian Plain, in the northern Urals, in Siberia, and even in the Far East."

These two authors place great emphasis upon the role of climate in the demise of the megafauna (512):

> The examples we have presented of extremely rapid decline in some nonexploited mammal species during the Quaternary and at present in northern Eurasia point to the supreme importance of external, abiotic environmental factors in their extinction. The near-total extinction of large species of the mammoth fauna in the tundra and taiga zones and their partial survival in the forest steppe and steppe confirms the decisive effects of climatic and landscape changes for the life and death of this species group. The best proof of what has been said is the ubiquitous transformation of the Upper Pleistocene "steppe" fauna into a forest and taiga fauna over huge areas in upper and middle latitudes in Eurasia. In this case, the primitive species were not crowded out by more progressive ones, nor were their population structures disrupted, nor were they destroyed by human activity. Environmental change was so radical and dramatic that morphological evolution simply did not have time to catch up. The destructive activity of people is often thought to have been decisive in the extinction of Quaternary giants (mammoths, rhinoceros, cave bear, and others). However, while human

influence on animal populations steadily increased in prehistory, it became definitive only in the last few millennia and centuries. In addition, the role of man has not been the same in all geographic zones. It has been greatest in the ancient heartlands of civilization in the Mediterranean Basin, western and central Asia, and China, and least in the polar desert. The remaining causes of extinction have apparently been secondary, merely promoting further reduction in ranges and numbers of species after they had suffered from climatic and landscape changes or from human pressures.

Other theories place greater or lesser emphasis upon human involvement on the extinction of the megafauna, but the point is that that alternative theories to a cataclysmic demise are rooted in sound factual evidence that strongly contradicts *Fingerprints of the Gods.*

The book *Quaternary Extinctions* is cited four times in *Fingerprints of the Gods* (Chapter 26), which puts forward Hancock's view of a cataclysm having struck Siberia and Alaska causing the demise of the mammoths and other fauna. In each case, no mention is made of the evidence and views proposed by the scientists on the basis of valid scientific research into the cause of fauna extinctions at the Pleistocene-Holocene boundary.

Conclusion

In the scenario painted by Hancock in *Fingerprints of the Gods,* Siberia and Alaska are ice-free with temperate climates prior to a cataclysm occurring at the end of the Last Glacial Maximum. This dramatic shift to an ice-bound climate explains the existence of frozen mammoths and the demise of a number of megafauna. Accordingly, to test Hancock's ideas the following factors would have to be proven correct:

1. The faunal remains found inside the mammoths and in the surrounding environment could not be from plants which can adapt to the cold;
2. The dates of frozen mammoths carcasses would be clustered in the couple of thousand years following the Last Glacial Maximum;
3. No mammoths would have survived the Earth Crustal Displacement-induced cataclysm;
4. Earth Crustal Displacement would need to be a valid scientific theory; and
5. No other geological and archaeological theory could better explain the currently available evidence.

Until 3,700 BP, a small woolly mammoth species existed about 200 km off the coast of Siberia, on Wrangel Island. The body of the mammoth was adapted for the cold, and the environment of Pleistocene Siberia and Alaska was far from the warm picture portrayed in *Fingerprints of the Gods.* Earth Crustal Displacement is a discredited hypothesis which no longer has any factual basis on which to stand: it was tested, as all scientific hypotheses are, and found wanting. The demise of the mammoth and other megafauna at the Pleistocene-Holocene transition is readily explained through climatic influences and human activities.

The information cited in this article was available to Hancock before the publication of the first edition of *Fingerprints of the Gods.* He has since brought out a second edition, with the only change being an introduction and additional photos. It is fitting to end of this article in Hancock's own words (2001, xvii–xviii): "I don't believe in revising or 'updating' books. For this reason, I haven't changed a word of the original text of *Fingerprints of the Gods.* All of it is reproduced here exactly as it was in the first, 1995, edition. . . . The proper place for all this new material to come out, in my view, is in new books, not in updates to old ones. So even as I write this introduction to the 2001 edition of *Fingerprints of the Gods* I am happy to report that I have also completed the first three chapters of *Underworld*—which is scheduled for publication in 2002 (please note that *Underworld* will not be covering the same subject material as *Fingerprints of the Gods*). Writing new books, rather than going back to tamper with books already written, is also the way I prefer to respond to criticisms of my work. . . . I am proud of this book and continue to stand by it despite the unremitting hostility and criticisms of academics."

Earth Crustal Displacement is a discredited hypothesis which no longer has any factual basis on which to stand: it was tested, as all scientific hypotheses are, and found wanting.

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The Mad Gasser of Mattoon

How the Press Created an Imaginary Chemical Weapons Attack

The mass media are often influential in spreading episodes of mass hysteria to the public at large. This is no more evident than in the famous case of the Mad Gasser of Mattoon.

BOB LADENDORF and ROBERT E. BARTHOLOMEW

Without question the two most famous episodes of "mass hysteria" and social delusion of the twentieth century were the 1938 Martian invasion panic and the 1944 case of the "mad gasser" of Mattoon. Yet few realize that both incidents were products of a chemical and biological weapons scare that parallels present-day American terrorism anxieties. While the Martian scare has been exaggerated in terms of the extent of those who were frightened or panicked (Bartholomew 1998), Princeton University psychologist Hadley Cantril found that 20 percent of those he interviewed assumed that the radio announcer in the bogus broadcast had misinterpreted what he was seeing and the "Martians" were actually members of

a German poison gas raid. One typical respondent stated: "The announcer said a meteor had fallen from Mars and I was sure that he thought that, but in back of my head I had the idea that the meteor was just a camouflage . . . and the Germans were attacking us with gas bombs" (Cantril 1940, 160).

During the early 1930s Americans were preoccupied with the threat of chemical and biological terrorism as many books and articles addressed the topic, especially gas warfare (Kenworthy 1930; Lefebure 1931; Hart 1933). In *The Air Menace and the Answer*, Elvira Fradkin (1934, 1) described America during this period as experiencing the "poison gas scare." Many magazines also addressed the subject (Moore 1933; Phillips 1933; St. John 1934). The League of Nations published many documents addressing the issue, and proceedings of the many conferences held on the topic appeared (Fradkin 1934). German aggression in Europe and increased publicity of the dangers of chemical and biological weapons were essential backdrops that rendered the Martian radio play more plausible as a German gas attack. A similar context helped to create the case of the "mad gasser" of Mattoon—once again with the sensationalizing of the American mass media. In fact, the media have often been implicated in fomenting mass hysterias and social delusions.

The Media and Mass Hysteria

The mass media are often influential in creating, spreading, and ironically even eventually ending mass hysteria. In most cases the media neither create the initial incident nor help to spread it, but exacerbate the outbreak once it is underway. Most mass hysteria reports in the scientific literature occur in schools and factories and involve the rapid spread of transient, benign illness symptoms among members of closely knit groups in enclosed settings (Sirois 1982; Bartholomew and Sirois 1996). Such cases are typically triggered by a few well-known factors: rumors, anxiety, and an exaggerated threat that is either real or imagined.

The media typically exacerbate these episodes by reporting public reaction to the hysteria diagnosis, which is often met by fierce opposition from victims, their friends, relatives, community members, and leaders (Cartter 1989). Physician Joel Nitzkin received physical threats after diagnosing a mass hysteria outbreak in a Florida school (Nitzkin 1976; Roueche 1978), while historian Elaine Showalter more recently retained the services of a bodyguard after stating her view that Gulf War Syndrome has a hysterical basis (Wessely 1999, personal communication). The initial diagnosis of hysteria is always going to be ambiguous since it takes time for all probable causes to be eliminated and negative test results to come back. In the interim, the participants typically express their views in the form of emotionally charged public meetings that are reported by the media and letters to the local press which often report misinformation (Hocking 1990).

Occasionally social protest movements are formed that thrive on media publicity surrounding a hysteria episode (Philen et al. 1989). While epidemic hysteria can never be confirmed with negative medical and environmental test

First Gas 'Victim' Blamed
Wave of Hysteria in Mattoon

MRS. BERT KEARNEY soothes daughter, Dorothy, 4, a victim of mysterious Mattoon malady blamed on a 'gas madman' and which has struck terror through the thriving central Illinois city. Another daughter, Carol, 2, watches.

Aline Kearney consoles her daughter Dorothy. Both reportedly became ill after smelling a sickly sweet odor. Her other daughter, Carol, looks on. She was unaffected and sleeping in another part of the house (Source: *The Chicago Herald-American*, September 17, 1944, p. 3).

results, it has several distinct features, the confluence of which almost certainly indicates the presence of psychogenic symptoms. These include: no plausible organic basis; symptoms that are transient and benign; occurrence in a segregated group; presence of extraordinary stress; rapid onset and recovery; symptom spread by sight or sound; and dispersion down the age-scale beginning in older or higher status persons.

In relatively rare instances involving the spread of mass hysteria (or social delusions involving the spread of a false belief but no illness symptoms) to the public at large, the media usually play an instrumental role, amplifying small, isolated events involving few people into full-scale episodes affecting hundreds or thousands. Eventually, the same media typically help to extinguish the very episodes they initially fostered by reporting accounts that discuss their psychological nature, often ridiculing those who persist in holding such beliefs. The media

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played a key role in the "miraculous" appearance of the Virgin Mary in Puerto Rico in 1953 before more than 150,000 people. The radio and press were not only responsible for the throngs of participants but also conditioning them to expect a spiritual event (Tumin and Feldman 1955). Medalia and Larsen (1958) concluded that the Washington state press were instrumental in spreading claims that atomic fallout from highly publicized Pacific bomb testing in 1954 was pitting windshields near Seattle. Jacobs (1965) also noted the key press role in his examination of erroneous claims that a maniacal slasher was roaming Taiwan in 1956. Bartholomew and Howard (1998) found that press speculation about claims of the world's first piloted heavier-than-air flying machine triggered a massive wave of imaginary airship sightings around the world between 1896 to 1913 in the United States, England, and New Zealand (see "The Airship Hysteria of 1896–97," by Robert Bartholomew, SKEPTICAL INQUIRER, 14[2], Winter 1990). During another sighting wave in the Pacific Northwest in 1947, newspaper reporters coined the term "flying saucer," sparking a global spate of similar reports (Strentz 1970). More recently, the press has been blamed in spreading psychogenic illness symptoms by publishing false accounts of poison gas attacks in tense ethnic conflicts in both Palestine and Kosovo (Radovanovic 1995).

As the police sped off to each new call about a mad gasser incident, armed citizens and farmers quickly followed.

The "Phantom Anesthetist" of Mattoon

The case of the mad gasser began about 11 P.M. Friday, September 1, 1944, as Aline Kearney lay in bed reading the newspaper. She was a young housewife whose husband was driving a cab that night in Mattoon, a small city of about 17,000 residents in eastern Illinois. They had a son and two daughters, including three-year-old Dorothy Ellen, who was sleeping in their bed. Also staying with the Kearneys was Aline's sister, Martha Reedy, whose husband was in the war. Suddenly, Aline smelled a sweet odor that made her sick. She was not able to move, her legs paralyzed. At some point, Dorothy Ellen also became sick from the odor. Mrs. Kearney yelled for her sister, who said she smelled the odor coming from an open bedroom window and contacted a neighbor, Mrs. Earl Robertson, who called police. The police searched and found nothing. Mrs. Kearney recovered in about thirty minutes. Her husband heard of the incident and rushed home, arriving about 12:30 A.M., upon which he said he saw a prowler at the bedroom window. Police were again called but found nothing. The whole family then left to stay with a relative elsewhere that night.

Mattoon's only major paper, the *Daily Journal-Gazette* (hereafter referred to as the *Gazette*) reported the incident on page 1 the next evening with a six-column headline, "'Anesthetic Prowler' on Loose." Two subheads under the headline added, "Mrs. Kearney and Daughter First Victims" and "Both Recover; Robber Fails to Get Into Home." Typical symptoms in this and other reports that were to follow included lightheadedness, paralysis, upset stomach, and vomiting, and followed the perception of a sickly sweet odor. All either recovered that night or the next day. On the night of September 5, Mrs. Carl Cordes picked up a small folded cloth on her porch, saw a wet spot, smelled it and was overcome by an odor. "It was a feeling of paralysis," she told the *Gazette* (September 6, 1944, p. 1). "My husband had to help me into the house and soon my lips were swollen and the roof of my mouth and my throat burned. I began to spit blood and my husband called a physician. It was more than two hours before I began to feel normal again."

For the next week, more and more reports of gassings were reported. Other newspapers began picking up on the story by September 6, and almost daily reports in the *Gazette*, *Chicago Tribune*, *Chicago Herald-American*, *Champaign News-Gazette*, and (Springfield) *Illinois State Journal* heightened awareness of the mad gasser nationwide. Joining the hunt for the mad gasser were the Illinois State Police, which sent five squad cars and ten officers, two FBI agents, and groups of armed citizens roaming the city. A group of fifty armed farmers, members of the Anti-Theft Association, also roamed the city. Meanwhile, the harried Mattoon police, headed by skeptical police chief C. Eugene Cole, received veiled criticism from a September 8 *Gazette* editorial about their initial doubts that a prowler existed.

As the police sped off to each new call about a mad gasser incident, armed citizens and farmers quickly followed. Police Commissioner Thomas Wright began ordering officers to arrest the chasers. One woman intending to protect herself loaded her soldier-husband's shotgun and blew a hole in her kitchen wall. Another sighting of demon-like eyes at a woman's bedroom window turned out to be a cat. A woman in the midst of a movie theater audience screamed that she was hit by gas although no one around her was affected! A few suspects were questioned, including a high school student playing a prank on a woman, but no arrests were made.

By September 14, gassing reports had stopped for good. In all there were at least three dozen reported victims, more than 100 if seventy in a roaming group claiming to be hit by the smell of gas are included. No prowler was ever identified or arrested, no physical evidence presented (the Cordes's cloth tested negative at a state crime lab for poison gas residue), and there was no medical substantiation of a gas being used. In fact, none of the victims ever reported having eye problems from the alleged gas, despite the fact that if it was a poisonous gas, the eyes would certainly be affected.

Memory Reconstruction and Embellishment

The Mattoon *Gazette* practically created the entire mad gasser scare. We know that the first few gassing reports were not

taken seriously by police. This was noted in a September 8 *Gazette* editorial criticizing police who had not taken Aline Kearney seriously. Nor did they place much credence in the three reports that quickly followed by residents who reported "gassings" only after learning of the Kearney case. According to the *Gazette*, police concluded that these early reports were "just imagination." They did not begin to become concerned until about September 5, after Mrs. Cordes found the strange cloth on her porch. But this police skepticism is not reflected in the early press reports in the early stages. On Saturday, September 2, the *Gazette* carried the first report on the incident: "Anesthetic Prowler on Loose." Not only was the gasser's existence treated as absolute fact, but there was an implication that there may be more gassings to follow. The sub-headline read: "Mrs. Kearney and Daughter First Victims . . . Robber Fails to get into Home."

Sensationalism by the *Gazette* prompted a series of retrospective gassing reports that supposedly had occurred before or during Mrs. Kearney's "attack." In reporting these cases, there is no hint of police skepticism or of the possibility of the gasser being imaginary. Only after reading or hearing of the *Gazette* story did several local families report similar home attacks. Mrs. George Rider said that the gasser had struck her Prairie Avenue home about the same time Mrs. Kearney and her daughter were made ill. At about the same time, a few blocks from Mrs. Rider, a woman and her children awoke and began vomiting. It was later assumed that the gasser had been there. Mr. and Mrs. Orban Raef of Grant Avenue said that the night before Mrs. Kearney was gassed, they were asleep at 3 A.M. when fumes came through the bedroom window. Both awoke and experienced "the same feeling of paralysis" and felt unwell for about ninety minutes. Curiously, friends staying at the house and sleeping in another room reported no ill effects. Finally, Mrs. Olive Brown on 22nd Street told police that several months earlier, she and her daughter had been gassed, but did not report the incident thinking no one would believe them. These incidents were mentioned in the next *Gazette* article about the gasser on September 5 ("'Anesthetic Prowler' Covers City"). The newspaper was not printed on Sundays and holidays.

Smith (1994, 35) states because there were gassing reports prior to Mrs. Kearney's on September 1, and they occurred late at night, it is "very unlikely that word of the incidents could have spread so quickly. As they were not reported in the newspaper until two days later, they simply had to be real events." Smith (1994, 39) himself admits that, "I am a physicist, not a psychologist." He makes no mention of studies on the fallibility of human memory and perception (see Loftus and Ketcham 1991). These earlier reports are dubious. At the time of the supposed gassings, no one reported these incidents to police, bothered to contact friends or relatives to share their concern or even fled their house. Imagine that you suspect someone has sprayed poison gas into your home, making you and your family ill. You experience dizziness, burning lips, vomiting, and partial limb paralysis. It was well-known that poison gas could cause permanent disabilities or even prove lethal. And what do these pre-September 1 "gas victims" do? They remain in the house and soon go back to sleep without telling a soul! This behavior only makes sense if, after learning of the mad gasser, these "victims" began redefining recent ambiguous incidents during which they had noticed a strange smell and embellished upon it.

This brings to mind a story discussed by UFO investigator Philip Klass (1974, 283–284). Early on the evening of June 27, 1959, the Reverend William Gill and a small group watched an illuminated object in the sky near Boianai, Papua New Guinea. They became excited after thinking they could see human-like figures waving back at them. The exchange of waves continued and a flashlight was turned on and off toward the "craft," which seemed to respond by moving in a pendulum fashion. With the object still in view, and having witnessed what he was certain was an alien spaceship for only about thirty minutes, what did Father Gill and the group do at this potentially historic juncture in history? He and the entire group went to dinner! They resumed watching at 7 o'clock. This makes for an exciting story, but human memory does not recall events as they happened, but as we *think* they happened. Often the details get changed after the fact. It brings to mind the saying, "The older I get, the better I was." If we had been convinced an alien craft were hovering nearby, we would likely have called the police and every friend and relative, and told them to get there—fast. Such stories sound exciting after the event, but logic and common sense suggest otherwise. We certainly would not have gone to dinner.

Press Reconstruction

Let us re-examine the report by Mrs. Kearney in the *Gazette* on September 2. Despite being quoted at length, neither she nor her sister mentioned any prowler. Her sister mentioned only an open window. Mrs. Kearney is quoted saying that her sister contacted the neighbor, Mrs. Earl Robertson, who called police. The newspaper then indicated that Mr. Robertson searched the yard and neighborhood "but could find no trace of the prowler. Police also searched without success." After being notified of the incident, Mr. Kearney arrived home about 12:30 A.M. and saw a prowler who was "tall, dressed in dark clothing and wore a tight fitting cap." He gave chase but the "prowler" escaped.

Not until Mr. Kearney arrives is any person identified as being at the bedroom window. In the article's lead and a following reference to Mrs. Kearney's parched and burned lips from "whatever was used by the prowler," the unidentified newspaper reporter conjectures that there is a prowler spraying gas through the bedroom window. After quoting Mrs. Kearney, the reporter then refers to Mr. Robertson, the police, and Mr. Kearney, who is reported as seeing a man at the window. That sighting, though, was for the *second* incident. Apparently, all involved assumed or reinterpreted the first incident as one caused by a prowler spraying an anesthetic substance.

The "anesthetic prowler" was thus a creation of the *Gazette* by combining the first incident involving Mrs. Kearney's paralysis and an odor with Mr. Kearney's alleged sighting of a prowler in the second incident. A close reading of this initial

public report shows that no one involved is quoted as saying that an "anesthetic prowler" was seen. That phrase is an invention of the headline writer. In addition, the "anesthetic prowler" now conveys the impression of retrospective rationalization, which was also evident in the next three reports of a "prowler" by the previously mentioned Rider, Raef, and Brown families. The *Gazette* then immediately added fuel to the fire by suggesting that there would be more victims; the subhead under that first headline was, "Mrs. Kearney and Daughter First Victims." The headline was "'Anesthetic Prowler' *on Loose.*'" The other newspapers soon followed with coverage, and the whole country was being made aware of the "mad gasser of Mattoon."

Context: The Poison Gas Scare

By the fall of 1944, with an Allied victory seeming inevitable, the fear of gas attacks was evident. Even though poison gas was not known to have been used in World War II for fear of retribution that could devastate civilians, during the year of the "gassings" in 1944, there were no less that 112 articles in *The New York Times Index* under the heading "chemical warfare." Dozens of popular and scientific periodicals around this time also discussed the poison gas peril in publications such as *Newsweek*, *Popular Science*, and *The American Journal of Public Health* (Lindley 1943; Scott 1944; Sanders 1945). As the tide of World War II turned increasingly in favor of the Allies, so did concern that desperate German commanders might resort to gas warfare (Marshall 1943). In fact, the Allies were so concerned that the Germans might use poison gas during their June 6, 1944, D-Day invasion of Normandy that they had a plan to retaliate within forty-eight hours with two bombing raids of 400 planes each, all loaded with chemical weapons designed to hit selected targets (Brown 1968). Gas warfare expert Frederic Brown (1968, 244) states that D-Day was the "most dangerous period for German [gas] initiation"—a credible threat that was widely discussed in the press during latter 1944. The mad gasser appeared just two and a half months after D-Day.

There was even discussion as to whether the United States should be the first to use gas. This view received a firestorm of criticism by many readers and commentators, fearful that the Axis powers would think that the use of gas was imminent, and initiate a first strike. Following editorials favoring the idea of using gas first in *The Chicago Tribune*, *The New York Daily News*, and the *Washington Times-Herald*, Norman Cousins (1944) branded their editors as "incredibly irresponsible."

About the time of the first gassing report in Mattoon by Aline Kearney, newspapers in Champaign, Chicago, and Springfield carried wire service articles about gas use. The August 30 *Champaign News-Gazette* included a page 1 article: "Believe Nazis Prepared To Use Gas." On August 31 the *Chicago Herald-American* had one on page 2 ("Report Nazis Plan Poison Gas Attack") and another report in the September 1 issue on page 2 ("Allies Ready If Nazis Use Gas"); and an Associated Press article in the (Springfield) *Illinois State Journal* on September 1 ("Unlikely Gas To Be Used In War") appeared on the day of Mrs. Kearney's alleged gassing. The article stated: "If Nazi extremists bent on ruling or ruining should employ gas against civilian populations in a bitter end resistance, the Allies would be in a position through air strength to drench German cities. . . . Recurrent rumors that the Germans are preparing to initiate gas warfare bring no official reaction here."

While Mattoon's *Gazette* did not carry news of the potential German use of gas, knowledge of the threat, whether perceived as domestic or foreign, would have been widespread. Many state newspapers were read by Mattoon citizens, as Johnson (1945) pointed out, and the gas fears were almost certainly discussed on radio and by word-of-mouth. In addition, during that same time, a Nazi prisoner had escaped from Camp Ellis in the Mattoon area and was reportedly seen in the city ("Hunt Escaped Nazi Here," *Gazette*, August 31, 1944). He was captured the following night in another city. If this were not enough, at the same time there was a wave of robberies in Mattoon ("Two Homes Entered," *Gazette*, August 31, 1944; "Robbery Wave Continues," *Gazette*, September 1, 1944).

The Shift Toward Terrorism

The "mad gasser" was triggered by a confluence of factors: sensational press coverage, ignorance of human perceptual fallibility and memory reconstruction, fear of Nazi poison gas attacks, an escaped Nazi in the city, and a robbery/break-in wave. It is essential to understand the overall context of what happened in Mattoon within the social and historical context as it was experienced by Mattoonites and reported by the media at the time. People of the period lived under the specter of massive poison gas attacks on civilian targets. While certainly unusual, given the war-scare context, the case of the mad gasser of Mattoon is not so bizarre after all. Indeed, during the twentieth century a strange odor was the most common trigger of epidemic hysteria in both job and school settings (Olkinuora 1984; Bartholomew and Sirois 1996). It was a sign of the times, which were dominated by occupational safety legislation and environmental fears.

Episodes such as the "mad gasser" may be set to recur. In Japan during 1995, the use of Sarin nerve gas on the Tokyo subway by the Aum Shinrikyo cult killed twelve people. It also triggered a wave of mass collapses from pseudo-attacks after commuters detected strange smells (Wessely 1995). Since the September 11, 2001, terrorist attacks on the United States, America has experienced an upsurge in reports of mass hysteria and social delusion. In one case, a man was subdued by police after squirting a mysterious spray at a Maryland subway station. Thirty-five persons in the vicinity were treated for symptoms ranging from nausea to sore throats. The substance turned out to be a common window cleaner (Lellman 2001). Similar episodes of mass psychogenic illness prompted by the chemical and bioterrorism scare were reported from California

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Truth Really Is Stranger Than Fiction—and More Entertaining

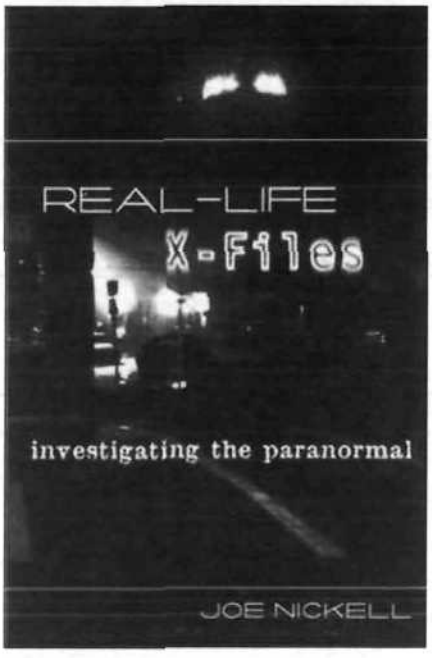
ROBERT A. BAKER

Real-Life X-Files: Investigating the Paranormal. By Joe Nickell. University Press of Kentucky, Lexington, Kentucky. 2001. 326 pp. ISBN 0-8131-2210-4. Cloth, $27.50.

Anyone who has ever watched and enjoyed an episode of the long-running TV series *The X-Files* will find Nickell's book even more entertaining and delightful. There is a major difference between the TV tales and the stories in Nickell's work, however. While the *X-Files* are fiction, Nickell's accounts are true. Whoever said that the truth is both stranger and more entertaining than fiction describes this book exactly. The cases that Nickell investigates are not only as exciting as the show but they are also much more satisfying if one is also a lover of mysteries and enjoys watching a first-rate mind systematically track down and expose the fakirs and mountebanks who attempt to mystify and deceive us.

Consisting of forty-seven short chapters or investigations, the work is not only an antidote to anyone infected with belief in the paranormal or supernatural but it is also a mini-education in how to go about successfully investigating and clarifying claims of haunted houses, UFO appearances, mysterious lights, encounters with the dead, spontaneous human combustion, alien abductions, crop circles, alleged psychics and visionaries, weeping statues and stigmata, and miracle workers of various kinds.

Nickell, a former private detective, professional magician, and an authority on the detection of forged documents, brings this training and experience to bear in his investigations. For cases in which Nickell's broad and deep experience does not suffice he invents ingenious new approaches to solve the mysteries he faces. Opposed to the armchair and "debunking" approaches in all his investigations, Nickell uses a "hands-on" approach, supplementing most of his investigations with explanatory drawings and photographs.



Covering a period of well over thirty years, none of the investigations in this book have been anthologized before. Others have never been reported so fully, and regular readers of Nickell's columns in SKEPTICAL INQUIRER and *Skeptical Briefs* will be delighted with some of the new material and the results of his appearances on various TV talk shows.

In this regard one of the most amusing incidents of all was Nickell's confrontation with an alleged clairvoyant on the infamous *Jerry Springer Show.* The so-called psychic claims to be able to "read" the contents of a locked refrigerator he had never seen before. Though the "psychic" appeared to be quite successful in demonstrating psychic abilities, he was totally incapable of passing Nickell's simple test of reading a three-letter word on a card in a sealed envelope. The verbal exchange between Nickell, the alleged psychic, and Springer is hilarious.

Also delightful is Nickell's exposure of the scam artists in *The Gypsies' "Great Trick."* Nickell's version of this impressive "fooler" has been shown on the *Discovery* channel several times. Nickell's investigation of the notorious Flatwoods UFO monster is another classic example of human credulity and demonstrates how effective a little suggestion can be when naive and untrained observers confront the unknown.

These unusual and mysterious detective stories are suffused with the author's wit and engaging sense of humor. As he notes in his introduction, "I joke that I have been in more

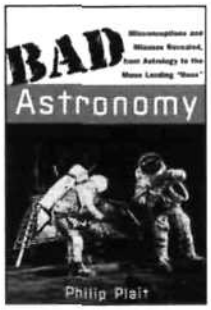
Robert A. Baker is professor emeritus in psychology at the University of Kentucky.

haunted houses than Casper and have even caught a few 'ghosts.'"

Nickell has never shied away from getting himself personally involved in some of the more daring and adventurous aspects of the cases he's studying. He has, for example, inflicted "stigmata" on himself with a knife, put sharp crystals under his eyelids, walked across a twenty-five-foot bed of fiery coals, and he has even appeared—not once—but *twice* on *The Jerry Springer Show!* If this isn't a display of the limits of human courage this reviewer doesn't know what is!

Above all, these investigations are predicated on a rational, scientific approach and, in his words, "since proving a negative is difficult (often impossible), the burden of proof must fall on whomever advances the claim. In addition, the maxim that 'extraordinary proof,' must apply, meaning that evidence must be commensurate with the extent of a claim. The principle of 'Occam's razor' also applies; it holds that the simplest tenable explanation—the one requiring the fewest assumptions—is to be preferred as most likely correct."

Nickell has followed these principles and has applied them in all of the investigations recounted in this book. Readers familiar with Nickell's other books will not want to miss this one, and those readers who have never been so fortunate as to have encountered this master of "explaining the bizarre" are in for a treat!



Astronomy and the Kitchen Sink

KENNETH SILBER

Bad Astronomy: Misconceptions and Misuses Revealed, from Astrology to the Moon Landing "Hoax." By Philip Plait. John Wiley & Sons, New York, 2002. ISBN 0-471-40976-6. 277 pp. Softcover, $15.95.

In the town of Nanyuki, Kenya, located on the equator, a local man named Peter McLeary performs an intriguing demonstration for tourists. He takes them to a line drawn on the ground (the putative location of the equator) and drains a pan of water on either side of it. The water flows clockwise when the pan is north of the line, and counterclockwise when the pan is south of the line. McLeary explains that this is due to Earth's rotation, and then collects tips from the tourists.

Those tips may start drying up if some of the tourists read *Bad Astronomy*, a lively, informative guide to astronomy-related errors and deceptions. As Philip Plait explains, Earth's rotation does divert moving objects in opposite directions in the northern and southern hemispheres, a phenomenon known as the Coriolis effect. However, the effect is significant only over large distances (as with the movement of hurricanes, say) and not, as commonly supposed, in toilets and kitchen sinks. As for McLeary, he achieves an effect by spinning the pan as he turns to face the audience (but he gets it backwards, since the Coriolis effect would make water in the northern hemisphere spin counterclockwise).

Bad Astronomy is the first in a planned series of Bad Science books to be published by John Wiley & Sons; the next installment will be *Bad Medicine*. Plait, an astronomer at California's Sonoma State University, is the creator of a useful Web site called Badastronomy.com, which also delves into wrong ideas involving space and celestial objects. *Bad Astronomy* deals with diverse topics including the inefficacy of astrology, the non-dependence of egg balancing on the spring equinox, and the dubious claims of companies that offer to have a star named after you or a loved one.

Did NASA fake the Moon landings? Plait exposes the hollowness of the arguments put forward for such an elaborate conspiratorial hoax. As hoax theorists point out, no stars are visible in the black lunar sky in photographs taken by the astronauts. As Plait explains, the stars were too faint to show up in the short-exposure photos, which were taken in daylight when the lunar surface is brightly lit by the Sun. By the way, he asks, if NASA had taken the photos on an expensive fake set, wouldn't the agency's Soviet rivals have called attention to something as basic as a failure to put in stars? [For a fuller account, see "Fox Special Questions Moon Landing But Not Its Own Credulities," SI, May/June 2001.]

Did Venus emerge from Jupiter, pass by the Earth, and cause the "miracles" written about in the Bible, as theorized by psychoanalyst Immanuel Velikovsky in the 1950s? Plait highlights the many problems with this theory. If Venus was ejected from Jupiter, why are the two planets' compositions so different? Why are Jupiter's moons still circling the giant planet in unperturbed orbits? If Venus passed within hundreds of miles of Earth, as Velikovsky asserted, then it would have literally filled the sky (a spectacle the ancients did not note). Moreover, it's hard to reconcile such an event with such facts as that our Moon is still in orbit and that humans survived all this.

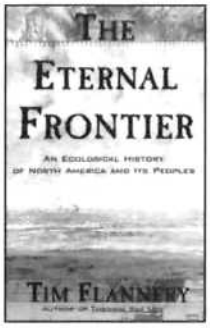
Plait is adept not only at untangling the convolutions of bogus theories but also at explaining everyday phenomena of the physical world. He clears up common confusion as to why Earth has seasons and why the Moon has phases, and may spare parents some embarrassment in fielding questions from their kids about why the sky is blue. *Bad Astronomy* is a powerful antidote to public befuddlement about the universe around us.

Kenneth Silber is a writer based in New York City.

Sobering Science-Based Reminders

ERIK STROMMEN

The Little Ice Age: How Climate Made History, 1300–1850 by Brian M. Fagan. Basic Books, New York, 2001. ISBN 0465022723.



The Eternal Frontier: An Ecological History of North America and Its Peoples by Tim Flannery. Atlantic Monthly Press, New York, 2001. ISBN 0871137895.

Throughout human history, weather and weather changes have been a source of supernatural speculation. Extreme weather, beneficent or malign, has long been seen as a manifestation of the will of the Gods to reward or punish humankind. More recently, weather and climate have become sources of equally fantastic futurist doomsday scenarios as well. Look more closely, however, and all this superstition should not be unexpected. It is surprising how little we know, empirically, about climate and human history. It might be said that angels lurk where scientists have yet to tread. The two books reviewed here both aim to remedy our ignorance. Both argue that climate is a product of lawful global processes that can be analyzed and understood and that man, while having distinct advantages over animals in being able to adapt to climate changes through technological means, is still ultimately prey to these forces. And both provide examinations of climate's relationship to civilization in the past that are compelling and, ultimately, unsettling.

Despite their similarities, these are two very different books. Fagan's is a detailed examination of "recent" history, a dramatic cooling then warming trend that took place during a five-to-six-hundred-year period lasting from 1300 to 1850 or so. Culling data from medieval and Enlightenment-era records in Western and Northern Europe, his goal is to show that the effects of climate change on human society can be concretely measured. He correlates the cooling documented from natural sources like tree rings and ice cores with human records of events like droughts, crop failures, and changes in seafaring routes. He then attempts to relate these climate-driven events to larger political and cultural changes.

Fagan argues, for example, that primitive French agricultural practices produced mass starvation when crops failed in the cold years and that this starvation was a contributing factor in the French Revolution. Thus, he reasons, climate change was a causal factor in one of history's most dramatic events. You don't have to accept this oddly indirect logic, however, to enjoy the book because there are so many other interesting concrete examples of climate impact.

I found the strange story of England's wineries to be the most striking. Once a major supplier of wine to Europe, the cold spell led to the complete collapse of viniculture in the British Isles. Only recently have grapes been re-established there again, as the world has gotten warmer.

The weakness of this book is that the many details, while intriguing, end up as a sort of a hodgepodge. Fagan relies on the sheer bulk of evidence to make his case. While many of his examples are insightful, others are not and this weakens his argument. The unevenness of the data aside, Fagan has pointed the way to re-examining many historical records for climate research purposes and has gathered much of them in this book for the first time.

Flannery's book takes a much broader time frame and geographical reference. He examines climate not over a few centuries but over millions of years—the last 20,000 or so in particular—and he is concerned exclusively with the North American continent. This is a very informative book, well written and thoughtfully presented. It starts with a review of the unique geological history that has made North America an "eternal frontier," constantly invaded throughout history by newcomers of all kinds from other continents. Flannery describes how North America's geography makes it unique in its extremes of weather: Deep winters and baking summers are a norm nowhere else on the planet. This same geography serves to amplify the impact of global heating and cooling trends, which have contributed to periodic extinctions on the continent.

When it comes to the climate's effects on man in the Americas, Flannery makes a strong case that the "mysteriously rapid" rise and fall of ancient pan-American societies, so breathlessly attributed to alien migrations or other silliness by New Agers, actually reflects the impact of climate changes combined with environmentally unsustainable farming and cultural practices. As this analysis suggests, his discussion of human interaction with the environment is unsentimental. He makes a strong case that the

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first human immigrants to North America, who did not farm and whose major artifacts are stone spearheads, literally hunted most of the continent's large animals of all kinds into extinction, inflicting serious damage on the ecology of the continent that remains to this day.

Flannery tries to be upbeat, but his assessment of North America's future is disturbing. European colonization has only exacerbated the damage done to the continent's ecosystems. He believes that large animals must be reintroduced to restore "balance" to ecosystems. He also warns that North Americans are rapidly consuming the continent's fresh water and exhausting its soil. Global warming could well bring dramatic changes in heat and cold distribution in North America, with tropical and subtropical invaders from South America and elsewhere finding new homes in the North, and large areas of the interior continent being given over to desert scrub.

Flannery's book achieves the impressive goal of placing human society within a larger geological and ecological framework by studying human archaeological evidence in the same way that other species are studied, and showing that historically climate change seems to affect humans the same way it affected plants and other animals. Fagan's book documents the concrete impacts of specific climatic events on specific areas of human activity in historical times. Taken together, these books offer a sobering science-based reminder that while humans may be unique animals on this planet, we are still ultimately subject to the same climatic forces that have affected animal life here for millions of years. The weather is not the province of gods, but of lawful natural processes. As our climate changes, our ability—or inability—to recognize, adapt to, and perhaps even influence those processes may well turn out to be the key issue that shapes the future of humans on Earth. □

THE MAD GASSER OF MATTOON *From page 54*

(Becerra and Malnic 2001) to the Philippines. In the latter case, a flu outbreak coupled with rumors of a mysterious "airborne virus" prompted thousands of college students to deluge local physicians (Villanueva et al. 2001; Reuters 2001). Like a chameleon, epidemic hysteria outbreaks mirror the times, thriving on fear and uncertainty.

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Listing does not preclude future review.

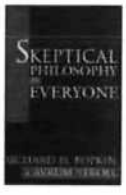
Chiropractic: The Greatest Hoax of the Century? The Whole Truth. **Ludmil A. Chotkowski, M.D., FACP.** New England Books, 1143 Chamberlain Highway, Kensington, CT 06037. 2002. ISBN 0-9657855-2-1. 202 pp. $14.95, softcover. Edited by "Quack-buster" Stephen M. Barrett, M.D., this is the second revised edition of a book, claimed to be the first by a medical doctor that, in the author's words, "exposes fairly and honestly chiropractic's failure to prove that 'adjusting' the spine can cure disease or maintain 'wellness' or health in any way." The opening chapter, "Why I Consider Chiropractic a Hoax," provides three case studies and presents the National Council Against Health Fraud's "Fact Sheet on Chiropractic." It's all downhill (for chiropractic) from there.

Cracking Cases: The Science of Solving Crimes. **Dr. Henry C. Lee with Thomas W. O'Neil.** Prometheus Books, 59 John Glenn Drive, Amherst, NY 14228-2197. 2002. ISBN 1-57392-985-9. 300 pp. $26, hardcover. World-renowned forensic expert Dr. Henry Lee takes the reader through the entire investigative process of five murders (including the O.J. Simpson case), all involving defendants who were respected members of the community and extremely clever. Considered by many to be the greatest criminologist in the world, Lee has dedicated his life to establishing the truth at crime scenes, no matter where the trail of evidence leads and no matter which side these scientific findings eventually assist. "I feel deeply that science when given a fair chance, can define the truth in any case," Lee writes. "That is my life's credo: Find the truth and bring it before the court, no matter where the facts lie."

Encyclopedia of Urban Legends. Jan Harold Brunvand. ABC-CLIO, 130 Cremona Drive, Santa Barbara, CA 93116. 2001. ISBN: 1-576-07076-X. 324 pp. $75, hardcover. One of the world's foremost authorities on urban legends, folklorist, professor, and CSICOP Fellow Jan Harold Brunvand, has finally put together the world's first fairly complete encyclopedia of urban legends. It is, writes Brunvand, an "introduction to the scholarly side of urban legend studies as well as to the popularization and commercialization of this modern folkloric genre." It is cross-referenced, with urban legends organized by individual legends as well as topics (such as "Nudity," "Babies," and "Accidents"). The biggest drawback is that many legends get only a brief treatment; however, given the breadth and complexity of legends, fuller citations would have doubled the size of the book. Though the hefty price tag may put off some readers, the exhaustive information on so many urban legends makes this a delightful book both as reference for the folklore student and as perusing pleasure for the interested layman. Handy to keep near your computer for the next time someone forwards you a chain e-mail about Neiman-Marcus cookie recipes or warnings about gang initiation killings.

Legend and Belief. **Linda Dégh.** Indiana University Press, 601 N. Morton Street, Bloomington, IN 47404-3797. 2001. ISBN 0-253-33929-4. 510 pp. $49.95, hardcover. A distinguished professor emerita of folklore at Indiana University provides a scholarly descriptive and analytical study of the legend, the most prolific and characteristic form of folklore in contemporary Western civilization. The legend's concerns are universal and eternal, touching upon the most sensitive areas of our existence. This is why, she says, stories about supernatural encounters, possession, miracles, evil spirits, monsters, and prophetic dreams continue to proliferate in the urban/industrial world. Legends are today communicated not only orally, face to face, but also in the press, on radio and television, on Web sites, and by e-mail. True to the tradition of the folklorist, Dégh does not explore occult phenomena themselves but examines the world of the legend that surrounds them. As she says, "As far as legends are concerned, it is irrelevant whether they are true. Most likely some of them are true, others are erroneous, and others are deliberate distortions. . . ." She adds: "We will have to walk the slippery paths of other disciplines such as sociology, psychology, semiotics, theology, criminology, cultural history, literature, and what are known summarily as the occult sciences." Dégh says there were times when people could distinguish fantasy from reality. "Our time is increasingly becoming a legend-time in which reality intermingles with unreality, without the capability of distinguishing one from the other."

Shockingly Close to the Truth! Confessions of a Grave-Robbing Ufologist. **James W. Moseley and Karl T. Pflock.** Prometheus Books, 59 John Glenn Drive, Amherst, NY 14228-2197. 2002. ISBN 1-57392-991-3. 371 pp. $25, hardcover. If you read John C. Sherwood's article "Gray Barker's Book of Bunk" in our May/June 2002 issue, you got a little flavor of what to expect from James Moseley. Moseley, longtime editor of the underground newsletter *Saucer Smear*, has always been part participant in, and part acerbic observer of, the sometimes wacky, weird, off-the-wall claims and behavior of saucer devotees and proponents. He wants to believe, but he's seen a lot of strange people come and go. This is billed as the "first-ever insider social history of ufology." Its approach is exemplified by the title of Moseley's prologue "The Truth Is Out There, Maybe." The tone is pure Moseley: candid, anecdotal, revelatory, tongue-and-cheek, willing to expose the passions, foibles, and foolhardiness of, in his words, "fifty years of UFOs, ufologists, ufology, and 'ufoology.'" "This isn't a scholarly work," he warns at the outset. It's a very personal recollection. . . . So we haven't larded it up with footnotes and other stigmata of the scholar at work." The organization, in five parts, is chronological: "The 1950s: S.A.U.C.E.R.S. and Space Brothers," "The 1960s: Swamp Gas and High Hopes," "The 1970s: Crashed Saucers and Kidnappers from Space," "The 1980s: Cosmic Babblegate," and "The 1990s and Beyond: Virtual Reality" with its opening chapter, "Trust No One (Especially Your Abductologist)."



Skeptical Philosophy for Everyone. **Richard H. Popkin and Avrum Stroll.** Prometheus Books, 59 John Glenn Drive, Amherst, NY 14228-2197. 2002. ISBN 1-57392-936-0. 342 pp. $35, hardcover. Are knowledge claims—and the criteria for making such claims—ever really valid? Throughout the history of Western thought, great thinkers have produced theories designed to forestall or refute philosophical skepticism, thereby seeking to demonstrate that knowledge claims are meaningful. Two philosophy professors review each major theory of philosophy chronologically and by subject areas: metaphysics, epistemology, ethics, political philosophy, and philosophy of religion. Within each subject they discuss how the skeptical challenges gave rise to new philosophical positions. They conclude with a debate about whether the doubts expressed by skeptics can ultimately be refuted.

—Kendrick Frazier and Benjamin Radford

More on Vardaman's Microletters

RICHARD CARRIER

Several observations must be communicated to SKEPTICAL INQUIRER readers regarding my previous article "Pseudohistory in Jerry Vardaman's Magic Coins" (*SI* 26:2, March/April 2002).

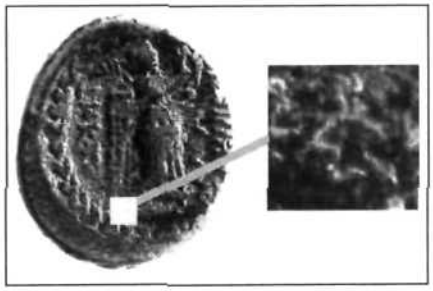
First, Vardaman passed away in November of 2000. I directed my work at his claims, still appearing in print (both John McRay and Lee Strobel cite him), not at the man, whom I believed was never challenged while alive. But it appears he was once, in a less-known antiquities journal (David Hendlin, "Theory of Secret Inscriptions on Coins is Disputed," *The Celator* 5:3, March 1991, 28–32). Sent to me by a kind reader, this included a response by Vardaman in which he added still further references to evidence of ordinary graffiti or inscription as "support" for his thesis, an argument I refuted. The rest of his response was mere challenge and assertion. Hendlin, for his part, corroborates some of my observations and adds some of his own, drawing on his vast experience in numismatic science. And he had the benefit of interrogating Vardaman. His article is an excellent addition to mine.

Second, several letters from readers unfairly questioned Vardaman's credentials. According to the Gale Database of Contemporary Authors he received a Ph.D. from Baylor University in 1974, after a Th.D. from Southwestern Baptist Theological Seminary in 1958 (he was an ordained Baptist minister). He was a genuine field archaeologist and held a professorship in religion at Tarleton State College in Stephenville, Texas, followed by instructorships at two Baptist seminaries, before receiving his position at Cobb in 1972.

Richard Carrier is a doctoral candidate in ancient history at Columbia University, specializing in the history of Greco-Roman science and religion.

Figure 1. Damascene Coin

Blow-up A



Blow-up B

Third, Joe D. Seger, current director of the Cobb Institute of Archaeology at Mississippi State University, wishes to clarify that the "professional staff and colleagues of Vardaman at the Institute had fully disassociated themselves from his micro-letter theories long before his retirement in 1993." Though I made no claims or inferences about their views or involvement in this affair, it should be noted that Seger's statement is not backed up by any public document to my knowledge, and when asked for articles where Institute scholars criticized or disavowed Vardaman's theory, none were provided. I also received a private communication from Professor Stephen Williams, author of *Fantastic Archaeology* (1991) and a Harvard emeritus, who apparently was one of a few outside experts called in by MSU in the 1970s to evaluate Vardaman's claims. The consultants gave a resounding condemnation, but the only action taken appears to have been the removal of Vardaman as director of the Cobb Institute in 1981. He remained a professor there, and nothing was published on the matter. All this was in essence confirmed by Seger. It would appear that MSU was embarrassed by Vardaman but was happy to sweep the whole affair under the rug.

Fourth, the curators of the British Museum informed me that many of the plates in Burnett were made from plaster-casts, not genuine photographs. So on a recent trip to England I studied the coin in question and arranged for new photographs. As we would not want to mislead our readers, it is fitting to present what I can personally vouch for as a genuine photo, remarking on what I observed under a magnifying glass and digital microscope. I can confirm there are no "microletters" on the coin (figure 1). The photo used in my original SKEPTICAL INQUIRER article faithfully indicates the nature and extent of the coin's wear, but it is clear from the new photo-

graph how a delusional mind could be led to see microletters in grit, oxidation, and numerous cracks and abrasions. Indeed, I observed the coin to be heavily patinated. Most of the scratchy lines and squiggles visible here are the green patina of oxidized bronze, not a part of the original coin as cast. I took great care under high magnification to try and see how Vardaman's letters might be interpreted, but to no avail. There is nothing even resembling what he claims, despite ample fuel for the imagination. All the observations made in my original article remain correct, including the fact that the key area of the coin is completely smooth from wear, and thus could not have microletters even if they were once there (blow-up A).

To be fair, elsewhere on the coin there is the clear appearance of the letter "M" ("W" was not invented until relatively recent times), a crack filled with bright green patina (blow-up B). This is the only thing that looks like a letter and that Vardaman did indeed represent in his drawings as a vague squiggle. So Vardaman's drawings were indeed based on a photograph or personal viewing of the coin, and not just wholly fictional. But this "letter" is an irregular zigzag, a random crack carved out by rust, a common outcome of impurities in the coining process permitting accelerated oxidation (rampant rust-based cracking is pronounced on the coin's other face). It is certainly not part of any word, and there is nothing like this anywhere else that accords with Vardaman's drawings.

Finally, many wrote me to ask whether my claim that 6 A.D. for Jesus's birth "is the most credible year to date" was a mistake for 6 B.C., as most references claim a date of 4 B.C. But experts have long known the Gospel of Matthew sets the date around 6 B.C. (or no later than 4 B.D.), while Luke sets the date at 6 A.D. However, if either Gospel contains any history, it is far more likely Luke than Matthew, for a number of reasons, not the least being that Luke alone writes like a historian and actually attempts to date events by reference to office-holders, while Matthew does not, but instead litters his account with fantastic stories begging credulity. So an objective assessment of the two conflicting sources leads us to Luke, not Matthew. The reason Matthew is ever preferred is largely ideological, not historical: e.g., it is impossible to fit Matthew's story to Luke's chronology, but possible (if you invent some external facts) to force Luke to fit Matthew. Thus, to preserve Biblical consistency one must side with Matthew. But the premises here are that the Gospels cannot contradict each other and do not contain false data, premises no skeptic can accept. Abandon those premises, and the most credible date for the nativity is A.D. 6. For more than you ever wanted to know about this, see www.infidels.org/library/modern/richard_carrier/quirinius.html. □

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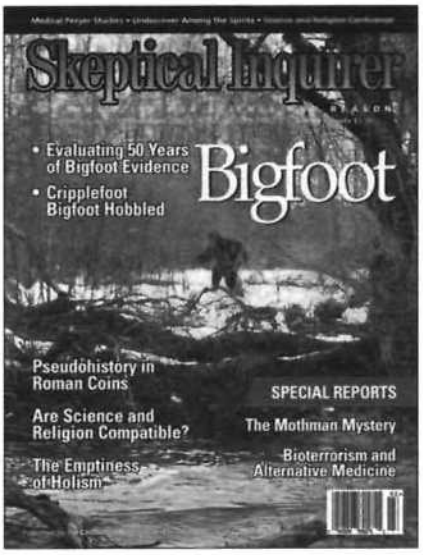

Bigfoot Evidence Evaluated

I thoroughly enjoyed Benjamin Radford's article about Bigfoot (March/April 2002). He summarized the evidence for and against Bigfoot in a succinct and objective manner, and I agreed wholeheartedly with his conclusions. However, there was one major piece of evidence—or lack thereof—that he did not discuss: the lack of evolutionary antecedents.

After all, a giant mammal like Bigfoot didn't just suddenly materialize out of the vacuum like a quantum fluctuation. The fossil record clearly demonstrates that monkeys have been in the Americas since the Eocene, roughly 20 million years ago. But these monkeys have remained relatively small, and largely confined to South America. We see no fossil record of transitional species leading up to an eight-foot tall, 500-pound hairy ape. Nada. Such a creature roaming the forests of North America must have evolved from other species. Surely, some of these transitional species would have left their mark in the fossil record. But no transitional species have been found, despite the enormous numbers of professional and amateur fossil hunters who have combed North America.

The fact that we see no fossil record of creatures leading up to Bigfoot, and zero physical evidence for Bigfoot creatures today, leads to the inescapable conclusion that Bigfoot simply does not exist.

Robert Naeye, Editor
Mercury magazine
Astronomical Society of the Pacific
San Francisco, California

Benjamin Radford responds to Robert Naeye:

I'm glad you liked my article, and you make an important point. Due to space constraints, I had to limit my discussion strictly to the main evidence offered in support of Bigfoot's existence. Different theories on Bigfoot (such as whether it is a paranormal entity) and non-evidence, such as the lack of evolutionary antecedents, are just as important but unfortunately could not fit.

I am pleased to announce that I solved the problem of Bigfoot over thirty years ago. During a summer doing field geology in the Klamath Mountains, I soon noticed that every hamlet had a sign saying "Welcome to Bigfoot Country." My partner and I concluded that Bigfoot was probably collecting royalties and living in a penthouse suite at the Mark Hopkins in San Francisco. Given the street people who were then (and now, for that matter) walking around in San Francisco, Bigfoot could probably wander around without drawing the slightest attention.

Steven I. Dutch
Professor, Natural and Applied Sciences
University of Wisconsin-Green Bay
Green Bay, Wisconsin

I really enjoyed Benjamin Radford's article on Bigfoot. Radford's reasons for being skeptical of Bigfoot's existence are solid, but he overlooked one: Bigfoot believers can't seem to agree if the creature is merely some type of undiscovered animal or a paranormal entity *with weird, almost superhuman, powers.*

A number of books were published in the 1970s exploring the latter view. These include *Earth's Secret Inhabitants* by D. Scott Rogo and Jerome Clark, *Creatures of the Outer Edge* by Clark and Loren Coleman, and *Bigfoot* by B. Ann Slate and Alan Berry. The Bigfoot stories recounted in these books differ significantly from the usual "hairy, manlike being seen running through the woods" reports that sometimes pop up in newspapers. In these books, Bigfoot appears in or near UFOs, becomes invisible, wears trousers, fails to leave tracks in fresh mud, is impervious to bullets, and so on. This "paranormal Bigfoot" is definitely more than just a flesh-and-blood animal unknown to science.

The paranormal Bigfoot is out of fashion with most of today's Sasquatch hunters, but in the 1970s, when this view was considered cutting edge, Bigfoot sightings with paranormal features were common. This seems to me to be strong evidence that the mystery behind Bigfoot has a cultural, not biological, answer.

Robert Boston
Silver Spring, Maryland

Yes, in fact see the following letter we received from perhaps the main proponent of Bigfoot paranormalism.—EDITORS

I've seen snippets of the new articles on Bigfoot, and after having done field work over thirty-six years, I agree that a physical Bigfoot animal simply is not there. But . . . due to personal contacts with them I do find that they are some form of manifested "OOBE" [out-of-body experience] event, and are temporary beings. Now this can be a new target for skeptics to shoot at.

John-Erik Beckjord
Director
Sasquatch Research Project

It is time to call a truce and look at how amateurs, scientists, hobbyists, academics, hunters, and skeptics can move forward together in search of valid evidence for or against Bigfoot/Sasquatch.

Radford's article in SKEPTIC INQUIRER on hominology reinforces my thoughts that we are at a historical crossroad in which the serious study of unknown primates can now begin. Recreationally and scientifically, Bigfoot-hunting is having a significant impact on our culture, as I will explore in a new book due out next year. . . .

It took over fifty years . . . for the first dead mountain gorilla to be brought back to science after it was rumored to be in east Africa, *and for the first live panda to be* extracted from Tibet after the first few were killed. It takes time to find animals. We must be patient. Dr. Bernard Heuvelmans, the father of cryptozoology who died last year, once wrote of the eyewitness accounts of giant lemurs in Africa. Today, they have been officially and scientifically described. There are other success stories in the field of primate biology. . . . The age of adventure is not over in primate cryptozoology, and SI's look at the subject merely reinforces this notion.

There are always going to be fakes and hoaxes. Of course, it is just as silly to think these claims are valid as for us to assume that every footprint presented of a Sasquatch stomping through a farmer's back forty are real. Bigfoot researchers are skeptics too. The vast majority of cases we investigate never get space in our articles, books, or conversations. In this realm, we are in agreement.

The article uses two non-Bigfoot stories to criticize the time we spend on searching for

these unknown primates. But isn't this line of thinking like saying that anthropologists should get out of the study of humans because the Piltdown Man and Tasaday hoaxes have occurred? These hoaxes should not stop us, but only clarify our desire to be more true to the scientific method, as most serious Sasquatch researchers are—in spite of the pranksters and troublesome fringe element.

I see this is a time of maturing in the field, a time for resolve and insight. I welcome the challenge of the SI article. The moment is upon us to stand shoulder to shoulder with skeptics and forge ahead, exploring what is out there, continuing the open-minded but critical search for tomorrow's surprises.

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The Problem of Holism

John Ruscio's disdain for holistic approaches ("The Emptiness of Holism," March/April 2002) is so clear that I doubt his capacity for the very objectivity he claims that the condemned approaches lack. Who but someone who wishes only to deride would allow his treatise to expand from a quote by a fictional character. Are we to assume that John Updike is a scientific authority disguised as a novelist? If not, were there not other more learned commentators to support his premise?

In that same paragraph Ruscio illustrates his lack of objectivity by using a captious argument that allows only for the polar choices in a false dichotomy: if one would choose to treat a broken leg with a cast, one must (if one follows Ruscio's logic) reject "holistic" treatment options such as magnets, acupuncture, or nutritional supplements. Treating a fracture with a cast does not in itself induce optimal healing, whereas nutritional supplements that help the body recover from the trauma of the injury may facilitate healing. The rational practitioner would potentially choose both of Ruscio's options: treating the leg to restore function and the person to promote health.

Ruscio is so intent on the absolute condemnation of holistic approaches that he deteriorates into sophistry. Rather than attack the approaches for which some evidence base exists, he chooses astrology—an approach that all but the most lightheaded of practitioners would disdain. . . .

I agree with Ruscio that clinical methodologies must be evidence based. Evidence, however, is accumulated over years of practice. Ruscio's point of view is so prejudicial that it seems to preclude further inquiry. For him the jury is in. He wishes it to be so for us as well. . . .

My greatest concern arises from years of experience with psychological practitioners who, like Ruscio, insist that the patient or client is nothing more than a constellation of features that can be understood with statistical methodologies and profiles. Treatment then consists of interventions applied because "science" says they should work. When these interventions are unsuccessful, the blame is often assigned to the patient or client through the label "non-compliant." While it is convenient and messy for the "scientific" practitioner to view each human being as unique, those with whom I have interacted over the years have expressed great appreciation for my willingness to view them thus.

Far from representing modern shamanism, holistic approaches simply attempt to compensate for the fact that, despite their scientific basis, current "scientific" methodologies are not always successful, and, even when clinically effective, sometimes leave the patient with pain, suffering, or lifelong disability. Do holistic methodologies need rigorous testing and study? Yes. Should those that are wholly ineffective be exposed? Yes. Is Ruscio in danger of pitching out the baby with the bathwater? Yes.

If you will allow me the license afforded Ruscio, Shakespeare's Hamlet said it best "There are more things in heaven and earth . . . than dreamt of in our philosophy." Or our science.

Norman M. Council
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John Ruscio loses me with several of the examples in his critique of holism. When a patient presents with a broken leg, the right solution may or may not be "a cast and some crutches." Yes, the "broader problem" should be considered: Is the patient an infant? Then cue models of possible abuse. Is the patient elderly? Or a professional athlete perhaps, with a career riding on nuances of treatment? The variables and statistics for each context are quite different, and for many areas definitive research doesn't exist.

Regarding his next example, I do prefer treatment of "the whole car." Adding oil when the oil light comes on may or may not be the right solution. Are the seals defective? Is the car still under warranty? Does the owner ever add oil? Does the owner know to shut the car off immediately after the light appears? The broader problem indeed requires a type of clinician with a feel for a spectrum of probabilities and unknowns, the assessment of which requires at least a modicum of induction. I don't mind calling "holistic" an approach that tries to surround a problem in these ways, with as much rigor and wit as is available. There seem to be many types of holism. Some are indefensible, as the astrological materials he cites, but Ruscio wrongly lumps all types of holism together. I want the right kind of holistic doctor, and auto mechanic. I realize this is a difficult and quack-prone search, but all this article offers are statisticians.

Charles J. Palus
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John Ruscio says "undoubtedly" the "smartest course of action" in the case of a car with a low oil warning light is to add oil. "By contrast, holism is empty rhetoric." However, I would prefer a more holistic approach; examine the whole engine and find where the oil is leaking out.

Neil Speirs
Melbourne, Australia

Kurtz on Science and Religion

As a longtime reader of SI, I have to rank Paul Kurtz's article on religion and science (March/April 2002) as one of the best. The one area he might have added to his discussion concerns the evil done in the name of religion. Many critics cite this as one of the main reasons for rejecting religion. However, in the spirit of Kurtz's separation of issues, it would appear that religious zealotry is not essentially different from all its other flavors—political, racial, ethnic, and so on. For those willing to become violent about their beliefs, any they have will do.

His clear articulation of what is essential about religion has changed my attitude. In writing a book that explores the implications of taking control of our own evolution, including the possibility of de facto immortality, one of my dilemmas has been how to convince readers that religious fairy tales

about the hereafter can and should be replaced with far more defensible and optimistic scenarios based on a scientific understanding of our universe.

Kurtz's article shows how to replace condescension with empathy for those who cherish their faith. My challenge is the same: to connect "scientific naturalism" with hope, promise, and expectation "in the light of the tragic character of the human condition."

Paul Bassett
Barrie, Ontario, Canada

Paul Kurtz's excellent overview of science and religion considered whether "scientific naturalism could provide an alternative dramatic, poetic rendering of the human condition." That might suggest an eventual naturalistic religion even with formal church structure.

A format for that drama and poetry may have been foretold in the opening scene of Stanley Kubrick's *2001: A Space Odyssey.* Those accompanying chords of Strauss's "Also Sprach Zarathustra" generated mystery with a suggestion of spirituality. That sense was amplified via the paranorama of primitive humans grazing with the animals. Here was revelation in a real-world setting. It could be prelude to a factual "Greatest Story Ever Told," never really addressed in that context. It should represent the story line, in a naturalistic Biblical epic. . . .

The story of course needs an initial Genesis, and ours would be cosmological and geological, in contrast to 3000 B.C. mythology. Once again, the most inspired cinema of the twentieth century previewed this concept. The first embryonic stirring of this vision occurred for me when viewing the evolutionary sequence in Disney's *Fantasia.* A volcanic punctuated landscape, booming in concert with Stravinski's powerful "Rite of Spring," actually generated religious oaths from audience in my vicinity.

In some near-future holographic planetarium setting, one might commence this Genesis with the fiery birth of the Sun, rotating jets with light-year dimensions.

Almost every religion offers immortality as prime enticement. But how long can a virtual immortality persist? Beyond the last syllable of recorded time, as the expanding universe blips into eternal darkness, there is not much point in being there. The trillions of years probably remaining are eternity enough. One can visually experience it and even the beginning, via state-of-the-art visual representations, along with lectures by professional cosmologists. Living vicariously the entire life span of this universe, dramatized via inspired musical accompaniment, should satiate the need for an impossible, eternal immortality.

But within all these spiritual embraces of an overwhelming universe, how can this format address the need for inclusive morality? The Old Testament evokes sacred laws which are nothing more than secular laws given supernatural sanction. The law of the land today is secular law, which supercedes religious law. However, our most basic secular laws address everyday behavior, and should be massaged in church services, perhaps in a pantomime mode, monitored by experienced judges. Empathy, as a formal discipline, tailored with psychology should also be included. The philosophical basics of morality and ethics could be addressed via a Steve Allen approach. In addition to costumed greats from the past, selected members of the congregation would join the debate.

Religions have included symbolic heroes like Buddha, Moses, and Christ. The true creators of civilization should be celebrated in this church; the pioneering Greek philosopher-scientists, DaVinci, Voltaire, Franklin, Newton, Darwin, Einstein. Their incredible and documented achievements were actually more miraculous than the contrived myths of classical religions.

B.D. Gildenberg
Tularosa, New Mexico

Paul Kurtz's article posits that while "the descriptive and explanatory functions of language are within the domain of science; the prescriptive and normative are the function of ethics, . . . the domain of the religious . . . is evocative, expressive, emotive." It seems to me, however, that this is the area that is well served by literature and the performing and fine arts.

The Bible, the Koran, and similar works should be considered on an equal footing with the works of Shakespeare, Asimov, Roddenberry, . . . *ad infinitum.* Equal in the sense of a right to be heard, not necessarily equal in truth value.

What is wrong with religion as opposed to literature? Religion, as its etymology shows, binds together. But in binding together particular groups, they necessarily separate the members of one group from another. The question is not whether science and religion are compatible, but whether religions are compatible with one another. Appreciating Shakespeare does not prevent one from finding value in Asimov. A science fiction fan is not an Asimovian or a Roddenberrian even if one or the other may be favored, along with other authors, but being a Christian precludes being a Muslim. That is how religion differs from literature.

Finally, Kurtz does leave out another area in which religion claims a priority: philosophy. How is it that we know what we know? Religion claims divine revelation. Skeptics rightly need empirical evidence. Why is it that we should in fact have such a thing as ethics? Is ethics merely the way people evolved, and just *is*? Or in fact, is one of Kurtz's list of "religious" truth claims true: that a consciousness exists "as a separate and distinct entity" rather than a "function of the brain," thereby making an avoidance of real suffering, rather than mere tropisms, a beneficent goal? This is a philosophical question, not a question of revelation. So there it is: Science, Ethics, Literature (the Arts), and Philosophy.

The limit of religion, in its capacities as listed by Kurtz, is to be just a particular genre of literature and the arts.

Charles Kluepfel
Bloomfield, New Jersey

I read Paul Kurtz's article on science and religion with great anticipation. When I reached the point where he concluded that "religion and science are compatible, depending of course on what is meant by religion," I found myself depressed and distressed. Redefining one source of conflict to make it compatible with another is a technique used frequently by politicians in order to maintain harmony and avoid dealing with obvious contradictions. If religion is defined in a way that eliminates conflict between it and science, how many of those who have a religious faith would accept the definition?

Redefinition of religion to make it compatible with science would require at the minimum: 1) elimination of any claim that reliable knowledge can be obtained through revelation or divine authority; 2) removal of any claim of being able to achieve absolute truth; 3) deletion of any reference to belief in supernatural beings or phenomena; 4) omission or modification of beliefs and claims that are at variance with modern knowledge established by methods acceptable to science.

Who would accept a definition of religion with these restrictions? I suggest that it would be only a portion of unitarian-universalists, ethical culturists, and other small, modern, progressive religious groups. A major objective of the several Unitarian ministers who were instrumental in formulating the First Humanist Manifesto was to provide the basis for a religion that was compatible with modern advances in knowledge,

including science, while retaining the values for humanity that Kurtz says are provided by religion but not by science. It is achievement of this compatibility that made it possible for William Schulz, former President of the Unitarian-Universalist Association, to be Humanist of the Year in 2000. I suggest that we spend less time discussing whether science and religion are compatible and more discussing how religion must change in order to be compatible, not only with science, but with modern knowledge generally.

Alfred E. Harper
Mercer Island, Washington

I found the article by Paul Kurtz to be quite disappointing. He seems to have abandoned rationality in defense of religion. He says that religion's domain is "evocative, expressive, emotive. It presents moral poetry, aesthetic inspiration, performative ceremonial rituals. . . ."

These are nice words, but how do they indicate that religion is any more compatible with science than the Harry Potter series, which he also mentions?

He further states that religion's "primary function is to express hope," but is unjustified hope compatible with science, or is it even a good thing? Islamic boys have high hopes of a free path to heaven (including seventy-two virgins) when they willingly become suicide bombers. Many of the hopes engendered by other religions are equally incompatible with science. . . .

Arthur L. Kohl
Woodland Hills, California

Paul Kurtz responds:

I agree with Paul Bassett that many evils are committed in the name of religion and that the challenge is to connect scientific interests with hope, promise, and expectation. I also agree with B. D. Gildenberg that there is a need for scientific narratives of evolutionary genesis and secular heroes. Charles Kluepfel points out that the real question is not whether religions are compatible with science, but with each other, given the bloody confrontations of religious fanatics. I of course agree with the need to separate philosophy from theology. Religion is closer to literature and the fine arts than science or ethics. Alfred Harper is indeed correct that I have redefined religion, but questions whether mainline religionists would accept this definition. I concur. My redefinition is a meta-account of the functional role of religion in order to explain its power. In answer to Arthur Kohl, I surely have not abandoned rationality in defense of religion, but have simply tried to understand why Jesus and Mohammed have endured, while Socrates and Spinoza are forgotten by all but a small group of intellectuals. Is it because we have not found dramatic symbols to arouse human imagination and inspire alternative moral commitment?

I do not believe that theistic religions are compatible with science, morality, or politics—insofar as they claim to possess divine truth, a deeper morality, or a higher sense of justice. The religions of the books of Abraham and the promises of salvation that they offer are based upon revelations and to my mind are false; for their claims are without evidential corroboration.

If this is the case, what is left for religions? They will not easily wither away as secularists expected, for they are forms of existential poetry, dramatizing the tragic dimensions of the human condition. We should recognize that if secular and humanistic outlooks are to have any enduring appeal, then they must offer naturalized moral poetry that can inspire hope and nourish courage.

The 'Mothman' Owls

Regarding "'Mothman' Solved" (March/April 2002):

No it ain't a common barn owl—it's a great horned owl, which can grow to massive proportions depending upon the local supply of rats, field mice and rabbits.

Any country boy who's been around a while has been startled by the "automobile-reflector-eyes" and huge wings, tucked against a tail, fluffy body. . . .

These owls get positively *huge* down in these parts (Georgia) and the spectacle of a startled great horned owl flapping his wings and swooping from a perch is enough to startle and traumatize any imaginative person.

Chris Long
chrislangeus@yahoo.com

Joe Nickell responds:

Mr. Long's sweeping, categorical statement ignores the specific evidence. The creature's squeaky cry, "funny little face," and presence near barns and abandoned buildings suggests the barn owl. But the great horned owl may well have played "Mothman" on occasion as no doubt did the barred owl, an intermediate-sized owl that is especially common in the vicinity of the original sightings. That area is the McClintick Wildlife Management Area—a bird sanctuary to be sure! On a recent trip to the region (which I hope to report on in Skeptical Briefs*), I also photographed a large stuffed owl—identified as a snowy owl (unusual for the area)—that had been shot off a local barn during the Mothman flap in 1966.*

'No Effect' Prayer Study

Kevin Christopher made some good points in his News & Comment piece on the Mayo Clinic's 'no effect' prayer study (March/April 2002). The main point was that there is an inadequate correlation between prayers and the medical outcomes of those being prayed for. But the real problem here, as Hector Avalos has indicated in "Can Science Prove That Prayer Works" (*Free Inquiry*, Summer 1997), is that "there can be no such thing as a controlled experiment concerning prayer." For example, pious Catholics light candles and pray for everyone who is sick, and religious relatives of the sick pray but they are not part of the selected group of prayers. Since there is no way of identifying all of the prayers, "control groups are not possible" and therefore "such purported scientific experiments are not possible." There is a sense, then, in which the Mayo study is irrelevant.

Art DiQuattro
Seattle, Washington

I've read the recent articles and letters about the effectiveness (or lack thereof) of prayer with interest. Nobody seems to have pointed out that, if prayer was shown to be effective in aiding the recovery from illness, we could perform an experiment to test the existence of God.

If prayer is communication with God and God rewards the good and punishes the bad, then there should be a measurable difference in the effectiveness of prayer for a saint and a sinner.

Unless, of course, God is perverse and deliberately refuses to allow an experiment to work that could prove his existence. But then how would that differ from a universe without a God?

Geoff Lane
Tottington, Bury, England

Transmitting Beliefs

After reading Kendrick Frazier's News & Comment (March/April 2002), about the

transmission of paranormal beliefs as published in *Sociological Perspective*, I am, no doubt, one of many who thought "Yes, of course, I knew that." I'm glad that lab experiments confirm what seems obvious concerning the social impact theory which states "The social impact of a message source comes . . . from three factors: the number of people, their strength or status, and their immediacy or closeness."

Another social impact, inclusive but not mentioned, is the very fact that a scientific experiment was being conducted and the subjects in the experiment were given oral instructions "that included a brief review of 'evidence' for a pyramid's special powers." Would results of the study been different if the subjects had been given balanced oral instructions of claims and counter claims for the pyramid's special powers? Perhaps the "prompting" of the testers unduly influenced the subjects.

It also struck me that the term *paranormal beliefs* could have easily been replaced by the term *religious beliefs* and made just as much sense. It is impossible for a child to resist the influence of family concerning religious beliefs but with age and education it becomes easier to resist social impact. Even then, the views of esteemed religious leaders, politicians, and especially some renowned scientists are difficult to resist. There are exceptions of course. "[My] deep religiosity . . . found an abrupt ending at age twelve, through the reading of popular scientific books" (Albert Einstein, as quoted from *Einstein, History, and Other Passions*, p. 172.) Other exceptions, no doubt, include the majority of SKEPTICAL INQUIRER's readers.

Craig Gosling
Indianapolis, Indiana

A minor comment related to Kendrick Frazier's News & Comment on paranormal beliefs. In the 1980s, while working for a division of Transamerica Bank, Insurance, et al. (that of the pyramid building in San Francisco), we, in sales, would receive directives from the corporate office to mention the "power of the pyramid" to prospective customers—it was supposed to facilitate sales. I could never bring myself to do that, and never did. It would have been humiliating to say that to an educated individual.

William Comiskey
Edina, Minnesota

The Berries on Multiverses

In Follow Up, March/April 2002, Bryce DeWitt criticizes the article "Multiverses and Blackberries" by Martin Gardner (September/October 2001). But he seems to chide Gardner for what are relatively minor points. The real thrust of Gardner's article can be summed up in his parting words:

"The stark truth is that there is not the slightest shred of reliable evidence that there is any universe other than the one we are in. No multiverse theory has so far provided a prediction that can be tested."

One must be quite old to recall the dismay felt by physicists when the famous Michelson-Morley experiment to detect the motion of Earth through the "luminiferous ether" produced a null result. Many clever modifications and additional experiments also failed to detect this motion. So may one therefore conclude that the luminiferous ether doesn't exist? The answer is not necessarily; however, if no experiment can detect its existence or measure its properties, it is a sterile concept lying outside the pale of science.

I think this was Gardner's message. One of the multiverse theories may yet turn out to be valid but right now there is too much speculative drivel being written about them. I would have been enlightened much more if a physicist of DeWitt's outstanding caliber had addressed the future prospects for finding direct experimental verification that these universes really exist.

William H. Lamb, Jr.
Eatonton, Georgia

Perhaps you will allow me to tweak my old friend and colleague Bryce DeWitt who has seen fit to take Martin Gardner to task.

He first praises Gardner for his being "one of the best and most intelligent debunkers of pseudoscience" but then berates him for his views on the "many worlds interpretation" of quantum mechanics.

This seems to be the history of Martin Gardner. In the preface of the second edition of his book *Fads and Fallacies* Gardner says:

"The first edition of this book prompted many curious letters from irate readers . . . oddly enough most of these correspondents objected to one chapter only, thinking all the others excellent."

Of course this does not prove anything except that people do not like to see their own ox gored.

Ezra T. Newman
Physics, Univ. of Pittsburgh
Pittsburgh, Pennsylvania

And Martin Gardner himself replied to DeWitt in our May/June 2002 issue.—EDITORS

Logic, Emotion Don't Meet

The excellence of your March/April 2002 issue was marred, in my opinion, by one thing: the repeated references to the Science and Religion conference last November. If I learned anything from *Star Trek* it's this: logic is logic and emotion is emotion and never the twain shall meet. McCoy never did wrangle a giggle out of Spock, who likewise failed to cool the hot temper of Bones. So, in my humble view, will science and religion never adequately prove God or disprove him to the satisfaction of all concerned. I've subscribed to SKEPTICAL INQUIRER for about a year now, and already I find this discussion tedious to the point of exasperation. Couldn't you keep it all contained to your annual Science and Religion issue so that I can ignore it all at one whack? Must you spoil the juicy meal of each issue with the day-old dinner roll of this tiresome, pointless debate?

Sally LeCroix
Nashville, Tennessee

Calculating God Controversy

Editor's note: Barry Seidman's review of the novel Calculating God *created a storm of controversy, beginning with this response from the novel's author, Robert J. Sawyer:*

As a skeptic and evolutionist, I was stunned by Barry Seidman's review of my Hugo Award-nominated science-fiction novel *Calculating God* (March/April 2002). He incredibly characterizes a novel whose *villains* are a pair of young-Earth creationists, destroying Burgess Shale fossils in order to erase evidence of evolution, as a pro-creationist work. Heck, one of my creationist antagonists has the last name "Falsey"—I couldn't have been more obvious about my sentiments. (What's that? You don't remember those characters from Seidman's review? Exactly.)

Further, Seidman misleadingly presents a line of dialog (omitting any indication that it *is* dialog) as if it were a statement of my personal beliefs. Yes, I have a character (an alien character—another little fact Seidman fails to cite) say: "That we live in a created universe is apparent to anyone with sufficient intelligence and information." But Seidman

makes no mention of the pages of later dialog in which the novel's human protagonist disputes this statement. (For an articulation of my own beliefs, see the essay "Science and God" that Borders commissioned to accompany the release of *Calculating God*: sfwriter.com/cgborder.htm.)

SI's editors should be chided for accepting a book review from someone who cites within that review a personal relationship with the author. Yes, Seidman sought me out repeatedly, and argued in what I felt was an illogical and rude fashion. Even after I stopped responding to his rants, he continued to send me unsolicited e-mails for years afterwards. There are countless disinterested skeptics who could have reviewed my book; using one of them would have been much more appropriate journalistically.

Contrary to Seidman's statements, my novel takes pains to point out arguments against intelligent design, irreducible complexity, and many other issues.

More: Seidman outrageously charges that I'm trying to discredit Sagan and Gould. As H. Paul Shuch, director of The SETI League, wrote to me (unsolicited; our first-ever contact): "I certainly identified with your protagonist. Of course, early on I recognized Steve Gould. And I saw in [the character's] atheism a healthy dose of Cosmic Carl. All in all, he was a most appealing composite."

Seidman, who said in a February 1999 e-mail that he'd only just started reading "sci-fi," now feels expert enough to declare that I should "stay far, far away from hard science fiction." This would astonish Stanley Schmidt, editor of *Analog*, universally considered the leading hard-SF magazine. Schmidt had planned to serialize *Calculating God*, and only scheduling difficulties with the hardcover publisher prevented its appearance. . . .

It would also astonish Gregory Benford, professor of physics at the University of California, Irvine, who is often cited as the greatest living hard-SF writer. Benford was one of the three judges who awarded *Calculating God* second place in the John W. Campbell Memorial Award for Best SF Novel of 2000. Wrote Benford: "Your handling of the ending was just right—no mysticism creeping in."

Barry Seidman's review isn't just unfairly damaging to my book: it's also part of the shift toward knee-jerk reaction and rhetorical sleight of hand within the skeptical community that is damaging the skeptical movement itself. Seidman should be ashamed.

Robert J. Sawyer
www.sfwriter.com

Barry Seidman responds to Robert Sawyer (condensed by editor):

One of your complaints is that I offer as proof of your creationist stance dialogue from the aliens in Calculating God. *In fact, you go out of your way to point out that* aliens *made these remarks as if that in itself ought to dismiss such remarks . . . which in science fiction, as you should know, is hardly the case. Indeed, alien characters are traditionally used to mirror human ideas and often the ideas of the author.*

Besides that point, it is clear that the lead alien in this book is indeed your "voice" in the book. How can I tell? Probably the biggest clue is that in the end, the aliens are correct and the human "protagonist" turns out the be wrong! Calculating God *is in this regard similar to* The X-Files, *where the off-the-wall lead guy who presents the pseudoscience side of the story always turns out to be correct in the end while Scully (the rational scientist) is always wrong! It is safe to say that both the writers of* The X-Files *and yourself in* Calculating God *manipulate the rules of scientific method and philosophical debate to foster the validity of pseudoscience.*

The claim that your novel points out "arguments against intelligent design and irreducible complexity" is irrelevant since those arguments are mostly won (in Calculating God*) by the proponents of intelligent design and irreducible complexity . . . yes, those darn aliens again!*

Finally, I think your criticism of SI for letting me discuss our previous e-mail conversation is misguided. It was indeed included to offer the reader a background on how you think with regard to science fiction and fantasy, and helped build an awareness of your recent tendency towards the latter while professing the former. . . . Greg Benford's comment notwithstanding. . . .

In his review of Robert Sawyer's *Calculating God*, Barry Seidman forgot that the second word in science fiction is "fiction." Perhaps I'm old fashioned, but a book review is supposed to give insight beyond the reviewer's opinions. Seidman's charges of "anti-science propaganda," "pseudoscience," and "creationism" show that he has written a polemic, not a review. His diatribe showed only the vaguest relationship with the book on my shelf.

If Seidman feels that only fantasy writers can use religious themes, he has a lot to learn. The greatest science fiction writers have used religious themes. The classic short story "The Star" by Sir Arthur C. Clarke is not "anti-science." It is, however, an example of story telling at its best.

Even the hardest science fiction writers violate scientific law. The key is consistency, not scientific rigor. It would be a pretty parochial science fiction that never allowed us to leave our solar system, except at sub-light speeds.

The greatest of them all, Isaac Asimov, invented "psychohistory" and made it the heart of his Foundation stories. And horrors, he used unscientific themes such as hyperdrive, hand-blasters, and psychic powers to fuel his story line. I eagerly await Seidman's analysis of Asimov's psychohistory in terms of "pseudoscience" and "anti-science."

Joseph Aspler
Kirkland, QC, Canada

I am a long-time subscriber to SI, a member of the Ontario Skeptics, and also a veteran reader of science fiction. (Among my many books is the first Canadian anthology of SF.) I want to register an objection to Barry F. Seidman's review of Robert J. Sawyer's novel *Calculating God*.

Seidman states, "Sawyer confuses science with fantasy." Then he goes on to maintain that "Sawyer began to use his fiction more as a weapon of anti-science propaganda rather than entertainment." Nowhere in the review does Seidman substantiate these statements. Indeed, it is impossible to do so!

Calculating God is a work of science fiction (like *Rendezvous with Rama*), not fantasy fiction (like *The Lord of the Rings*). The novel assumes a cosmos that is understandable, not magical. Far from being a work of "propaganda," the novel is a work of fiction. Seidman ascribes the attitudes of some of its characters—but not others—to its author. Give-away sentences begin "Sawyer proposes . . ." and "Sawyer also includes. . . ." It is not Sawyer, it is some of his characters who are speaking.

Seidman fails to appreciate the difference between a tract and a novel. (The former is a single-minded statement of a position; the latter is a nuanced, dramatic, and imaginative presentation of points of view.) *Calculating God* is no tract but a novel, a well-written prose narrative in which characters converse and argue points of view. Sawyer is adept at counterpointing points of view.

A serious reading of *Calculating God* leaves no reader in doubt that (a) it is a serious work of SF; (b) it is a serious discussion of the nature of reality; and (c) it is a novel that will be enjoyed by serious readers—and intelligent reviewers.

John Robert Colombo
Toronto, Canada

Robert J. Sawyer is a science fiction writer.
Calculating God is a science fiction novel.

The operative word in both cases is "fiction."...

End of discussion.
End of argument.
End of debate.
It's speculative fiction.
Get over it!

Peter de Jager
Brampton, Ontario, Canada

On Being Stared At

In a letter in the March/April 2002 SI, Andrew Alan Smith thought he had detected an artifact arising from the randomized sequences used in some of my staring experiments. He speculated that there might be a tendency for subjects to guess Not-looking (N) and Looking (L) in the sequence N-L-N-L-N.

Smith's argument is flawed. First, he considered only two out of the twenty-four randomized sequences, and looked at only the first three to five trials out of the twenty-trial sequences. He claimed that he had found systematic deviations from chance. The set of twenty-four sequences was counterbalanced to avoid any systematic bias. When I applied Smith's hypothetical guessing pattern to all twenty-four sequences, the results were exactly at the chance level of 50 percent. Second, Smith made an elementary mistake in his calculations. In his small sample there were more correct "guesses" in the N than in the L trials, the opposite of his claim.

Smith's arguments are not only erroneous, but irrelevant to the evidence for the staring effect. In peer-reviewed journals, I have already published data from thousands of trials using structureless randomizations, based on tossing coins, with results that are highly significant statistically. The same pattern of results was also apparent using the set of twenty-four counterbalanced sequences, without giving feedback to the subjects. The details are available on my Web site (www.sheldrake.org).

Rupert Sheldrake
London, England

Hypothesis, Not Theory

My curriculum, as a middle school science teacher, encompasses many scientific theories, including evolution. When I read the March/April letters to the editor I grimaced. Sometimes I think that we science supporters are our own worst enemies.

Throughout the school year, I continually take great pains to remind my students of the differences between an hypothesis and a scientific theory, emphasizing that a theory, such as the Cell Theory or Atomic Theory, is an *explanation* of a large body of scientific data, and not just an educated guess. This, so far, has warded off any claim from students or parents that a theory is "something that has not been proved."

Then I read Grant Hutchison's letter. In it, he states that "(t)he Rare Earth Hypothesis is a scientific *theory*" (emphasis mine) which will stand or fall "under peer review." No, it isn't. Like the Life Everywhere Hypothesis, the Rare Earth Hypothesis is just that—a scientific hypothesis. It cannot be tested against any scientific data, because, so far, no such data exist—until, of course, SETI receives that cosmic SOS, or until the federal government releases those Roswell corpses. (Just kidding!) In any event, we must choose our words carefully—and keep in mind the now-proverbial saying that "absence of evidence is not evidence of absence."

By the way, the punster-of-the-year award goes to Ralph Estling [Forum column "It's Life Captain . . . , March/April 2002] for reminding us that "(a)ll gall is divided into three parts." Julius Caesar himself would have laughed as much as I did.

Edward B. Mills
edmills@gte.net

In his response to my baffled letter (March/April 2002), David Darling takes me to task for "jumping to conclusions about other people's beliefs."

I thought I had very clearly indicated my lack of knowledge about Darling's beliefs by presenting my remarks as a series of questions, beginning with the phrase: "Does he seriously believe. . . ?" It's a clumsy rhetorical device, I admit, but it's usually taken to indicate the sentiment: "I don't think he does, but I'm forced to entertain the notion." So I'm glad to see Darling confirm he doesn't believe any of the dubious things I mentioned.

But my bafflement persists. In his response to my comments Darling quotes a categorical statement from his own book: "In the end a scientist's personal beliefs are irrelevant because science is a communal, peer-reviewed venture in which belief is always subordinate to data." Indeed—and that was the whole thrust of my letter. The reason I felt the need to write the letter in the first place was in response to Darling's serious modification of this view in the special case of Guillermo Gonzalez: ". . . in the case of Gonzalez it matters because his underlying conviction has led him to play a very significant role in raising the prominence of the Rare Earth debate." (As quoted by Kendrick Frazier, "Was the 'Rare Earth' Hypothesis Influenced by a Creationist?" News & Comment, November/December 2001.)

So my question remains. If Darling doesn't believe any of the odd things I asked about, why does he want to modify his fundamentally fair-minded view in the case of creationism and the Rare Earth Hypothesis?

Grant Hutchison
Dundee, United Kingdom

What Is True? What Is Science?

As the gap (at the least) remains wide between "science" and "humanities" per C.P. Snow's old division, I've been hit often by thinkers with the idea that everyone's idea/approach to a subject is equally valid—which I don't believe. It's true that in many fields problems remain. For instance, in the study of legends of the past, it may well be that sometimes "plausibility" may be all that can be said of certain approaches. But we still are not quite in a "night in which all cats are gray," as a scholar wrote many decades ago. . . .

Hugh H. Trotti
Decatur, Georgia

The letters column is a forum for views on matters raised in previous issues. **Letters should be no more than 225 words.** Due to the volume of letters not all can be published. Address letters to Letters to the Editor, SKEPTICAL INQUIRER. Send by mail to 944 Deer Dr. NE, Albuquerque, NM 87122; by fax to 505-828-2080; or by e-mail to letters@csicop.org (include name and address).

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A Watercolor Fantasyland?

No. It's actually an image of the center of the Omega Nebula, a hotbed of newly born stars wrapped in colorful blankets of glowing gas and cradled in an enormous cold, dark hydrogen cloud. This stunning picture was taken by the newly installed Advanced Camera for Surveys (ACS) aboard NASA's Hubble Space Telescope.

The region of the nebula shown in this photograph is about 3,500 times wider than our solar system. The area represents about 60 percent of the total view captured by ACS. The nebula, also called M17 and the Swan Nebula, resides 5,500 light-years away in the constellation Sagittarius.

Credit: NASA, H. Ford (JHU), G. Illingworth (USCS/LO), M.Clampin. (STScI), G. Hartig (STScI), the ACS Science Team, and ESA

THE COMMITTEE FOR THE SCIENTIFIC INVESTIGATION OF CLAIMS OF THE PARANORMAL

The Committee is a nonprofit scientific and educational organization. The SKEPTICAL INQUIRER is its official journal.

The Committee for the Scientific Investigation of Claims of the Paranormal encourages the critical investigation of paranormal and fringe-science claims from a responsible, scientific point of view and disseminates factual information about the results of such inquiries to the scientific community, the media, and the public. It also promotes science and scientific inquiry, critical thinking, science education, and the use of reason in examining important issues.

Skeptical Inquirer

THE MAGAZINE FOR SCIENCE AND REASON

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